

No. 2016-1677

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

UNIVERSAL REMOTE CONTROL, INC.,

Appellant,

v.

UNIVERSAL ELECTRONICS, INC.,

Appellee.

On appeal from the United States Patent And Trademark Office, Patent Trial and
Appeal Board in No. IPR2014-1146

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CERTIFICATE OF INTEREST

FORM 9. Certificate of Interest

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Universal Remote Control, Inc. v. Universal Electronics, Inc.

Case No. 16-1677

CERTIFICATE OF INTEREST

Counsel for the (petitioner) appellant (respondent) (appellee) (amicus) (name of party)
Universal Remote Control, Inc. certifies the following (use "None" if applicable; use extra sheets
if necessary):

1. The full name of every party or amicus represented by me is:

Universal Remote Control, Inc.

2. The name of the real party in interest (Please only include any real party in interest
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3. All parent corporations and any publicly held companies that own 10 percent of the
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None

4. ☒ The names of all law firms and the partners or associates that appeared for the party
or amicus now represented by me in the trial court or agency or are expected to appear
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Peter H. Kang, Constantine Trela, Theodore W. Chandler, Anna M. Weinberg, Ash Nagdev, Ferenc Pazmandi (patent agent),
and Clarence Rowland (formerly) of Sidley Austin LLP
Douglas A. Miro and Keith Barkaus of Ostrolenk Faber LLP.

03/23/2016

Date

/s/ Peter H. Kang

Signature of counsel

Please Note: All questions must be answered

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Printed name of counsel

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STATEMENT OF RELATED CASES

Appellant Universal Remote Control Inc. (“URC”) certifies that no other appeal from the same proceeding in the United States Patent Trial and Appeal Board (“PTAB” or “Board”) is or was previously before this Court or any other appellate court. In *Universal Electronics, Inc. v. Universal Remote Control, Inc.*, No. 13-0984 (C.D. Cal. filed June 28, 2013), Appellee, Universal Electronics, Inc. (“UEI”), is asserting U.S. Patent No. 8,243,207 (“the ’207 patent”), among other patents, against URC. This district court litigation was stayed by agreement of the parties pending disposition of the *inter partes* review challenging the validity of certain claims of the ’207 patent, and the parties have submitted briefs to the district court on the issue of maintaining the stay pending this appeal and Appeal No. 16-1676, an appeal from the PTAB relating to another patent at issue in that same district court litigation.

JURISDICTIONAL STATEMENT

The Board had jurisdiction under 35 U.S.C. § 6 over this *inter partes* review proceeding challenging the validity of certain '207 patent claims based on a petition filed by URC. On January 9, 2015, the Board instituted trial for claims 13-15 of the '207 patent ("the Institution Decision"). The Board issued its Final Written Decision pursuant to 35 U.S.C. § 318(a) on December 10, 2015. URC timely filed its notice of appeal on January 29, 2016. This Court has jurisdiction under 28 U.S.C. § 1295(a)(4)(A) and 35 U.S.C. §§ 319 and 141.

STATEMENT OF ISSUES

1. Whether, in its Final Written Decision, the Board erred in narrowly construing “configuration of the entertainment device” as “information stored in memory in the entertainment device that can be accessed and used to configure the entertainment device” by (1) importing limitations from one embodiment into the claims and ignoring other embodiments and (2) requiring “actively switch[ing] between a plurality of inputs and a plurality of outputs” and “a set of executable instructions and data stored in memory in the entertainment device that is first downloaded from a personal computer and is then accessed and used after the entertainment device receives a signal from the remote control that contains a command value that is associated with such configuration”?

2. Whether U.S. Patent Application No. US 2003/0120831 by Dubil *et al.* (“Dubil”) anticipates claims 13-15 of the ’207 patent either under (a) the Board’s initial, correct construction or (b) the Board’s subsequent erroneous construction of “configuration of the entertainment device”?

INTRODUCTION

Limitations should not be read into a claim from the specification. The Board violated this settled rule in this case.

This appeal concerns a patent relating generally to a home entertainment system (for example, a DVD player, a stereo, and a VCR all connected in a system

to a TV screen), and in particular the proper construction of the claim term “configuration of the entertainment device.” Claim 13 of the ’207 patent expressly recites what this term encompasses: “the configuration of the entertainment device comprising at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device.” Appx.43(12:15-20). Claim 14 uses virtually the same language. Appx.43(12:50-56). Thus, the claims tell the reader that “configuration of the entertainment device” includes (1) one device in the entertainment system being used as an input source, and (2) one device in that system being used as an output destination for the entertainment device. In other words, the literal language of the claims indicates that the claimed “configuration” includes the entertainment device using one input device and one output device – for example, a DVD player as input and a flat screen monitor as the output where the claimed “entertainment device” sits in between those input and output devices.

The Board’s Institution Decision properly found that “configuration of the entertainment device” reads on “AV [audio-visual] receivers and other entertainment devices that passively transmit signals from input to output devices without necessarily engaging in any switching activity,” Appx.199-200, and properly rejected the contention that under the claims the entertainment device

must be “affirmatively selecting an AV input source and an AV output destination and affirmatively performing switching actions accordingly.” Appx.276. The specification is consistent with this interpretation, because the ’207 patent’s disclosure includes “configurations” in which no such internal switching inside the “entertainment device” occurs at all (for example, where a single source or a single destination is configured). Under the proper construction of “configuration of the entertainment device,” as acknowledged by the Board in the Institution Decision, the Dubil reference unquestionably anticipates claims 13-15.

The claim construction issue on appeal stems from error in the Board’s Final Written Decision, which improperly overlays multiple narrowing limitations on the phrase “configuration of the entertainment device.” The Board required the claimed “configuration” to be specific executable instructions which must be stored in a memory in the “entertainment device” and which must be downloaded to, accessed by, and used solely internally within that device to “actively switch” between multiple inputs and outputs. The Board’s added limitations ignore the ’207 patent’s disclosure of storing the “configuration” in other devices, such as a remote server, the remote control, or other controlling device, or any other suitably equipped device. Further, the Board’s narrowing ignores disclosures in the ’207 patent of configurations which do not require any switching at all, such as where only a single source or a single output destination was configured in the first place.

The Board further relied on its improper construction of “configuration of the entertainment device” to narrowly interpret the terms “access and use the configuration” (in claims 13 and 14) and “the configuration ... is downloaded” (in claim 13) in its analysis of the prior art. For the same reasons that the Board’s construction of “configuration of the entertainment device” is legally erroneous, its follow-on interpretations of the “access and use” and “download” terms likewise import limitations from the specification and ignore both broader disclosures in the specification and the plain language of the claims themselves.

Because the Board relied on improper claim constructions, this Court should reverse the Board’s holding that Dubil does not anticipate. Under the proper claim construction (as set forth in the Institution Decision), Dubil does anticipate. Further, even under the Board’s improper construction requiring “active switching” by the “entertainment device,” the Board ignored indisputable teachings in Dubil which disclose such active switching.

The Court should reverse the Board’s Final Written Decision both as to claim construction (“configuration of the entertainment device” which is “accessed and used” and “downloaded”) and as to anticipation by Dubil.

STATEMENT OF THE CASE

I. Statement of Facts

A. The '207 Patent

1. The Nature of the Invention

The '207 patent issued on August 14, 2012 and is entitled “System and Method for Activity Based Configuration of an Entertainment System.” Appx.30. The '207 patent generally relates to configuring a home entertainment system. Appx.38(1:31-33). In particular, the '207 patent describes using a remote control having at least one activity key or button which, when activated, initiates certain previously defined configuration actions that match the user's desired activity, such as watching TV or listening to music. Appx.38(1:36-45).

The '207 patent purportedly improves upon home entertainment systems existing at the time of the invention. The patent explains that home entertainment systems having an AV receiver coupled to multiple media sources and media rendering devices were well known at the time. Appx.38(1:7-20). “GUI based setup menus for AV receiver functions such as input and output assignments” were also well known at the time. Appx.40(5:30-42) (referencing the Denon AV Surround Receiver STR-DA5500ES Owner's Manual); *see* Appx.38(1:56-63) (“prior art initial user set up of AV receivers is generally GUI based and includes assignment of user friendly names to source and destination appliances”).

According to the '207 patent, as these home entertainment systems became more

complex due to multiple media formats and appliance types, “the user actions required to configure a home entertainment system to match a desired activity such as watching TV or listening to music have become increasingly onerous and error prone.” Appx.38(1:7-20). The ’207 patent admits that prior art “methods have been proposed for automating all or part of these configuration operations,” but alleges that they are “subject to error” and cause “user frustration.” Appx.38(1:20-27). The ’207 patent purported to solve this problem.

2. The ’207 Patent Claims at Issue

Claims 13-15 of the ’207 patent are at issue in this appeal. Independent claim 13 provides:

13. A method for configuring an audio visual entertainment device in communication with a plurality of devices for an activity, comprising:

associating a command value corresponding to an activity key of a controlling device with *a configuration of the entertainment device, the configuration of the entertainment device comprising at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device*; and

causing the entertainment device to *access and use the configuration* associated with the command value corresponding to the activity key of the controlling device in response to the entertainment device receiving from the controlling device a signal which includes the command value corresponding to the activity key of the controlling device;

wherein *the configuration of the entertainment device is downloaded into the entertainment device* from a computing device

in communication with the entertainment device and wherein a configuration of the controlling device in which an activation of one or more command keys of the controlling device will cause the controlling device to communicate commands to the one or more of the audio visual source device and the audio visual out put destination device is downloaded into the controlling device from a computing device in communication with the controlling device.

Appx.43(12:10-39) (emphases added).

The term “configuration of the entertainment device” is limited by the express language of claim 13 as “*comprising at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device.*” Appx.43(12:15-20) (emphasis added). That is, claim 13 covers a configuration in which there is only one input and one output. The term “active switching” is not part of the claim language.

Claim 14 of the '207 patent states as follows:

14. A method for configuring an audio visual entertainment device in communication with a plurality of devices for an activity, comprising:

receiving at the entertainment device from a controlling device a configuration request signal, wherein the configuration request signal includes a command value corresponding to an activity key of a controlling device;

causing the command value corresponding to the activity key of the controlling device included in the configuration request signal to be automatically associated with *a configuration of the entertainment device wherein the configuration of the entertainment*

device comprises at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device; and

causing the entertainment device *to access and use the configuration* associated with the command value corresponding to the activity key of the controlling device in response to the entertainment device subsequently receiving from the controlling device a command signal which includes the command value corresponding to the activity key of the controlling device.

Appx.43(12:40-63) (emphases added).

Like claim 13, claim 14 covers a configuration that uses only one input and one output. The term “active switching” is not part of the language of claim 14 either.

Unlike claim 13, claim 14 does not require “downloading” of the “configuration of the entertainment device” but has the same “access and use the configuration” language as claim 13.

Dependent claim 15 does not elaborate on or provide any method or structural restrictions on the terms “access and use” or “download”, and refers to the “configuration of the entertainment device” in connection with selecting one of the devices for the claimed configuration using a graphical user interface.

Appx.43(12:64-13:2).

3. The Exemplary Embodiments

The '207 patent sets forth an exemplary system of FIG. 1, which includes a remote controlling device 100 which cooperates with the AV receiver 102 and other devices in order to allow the user to engage in a desired “activity.” Appx.38-39(2:59-3:4). FIG. 1 of the '207 patent is reproduced below, with colors added.

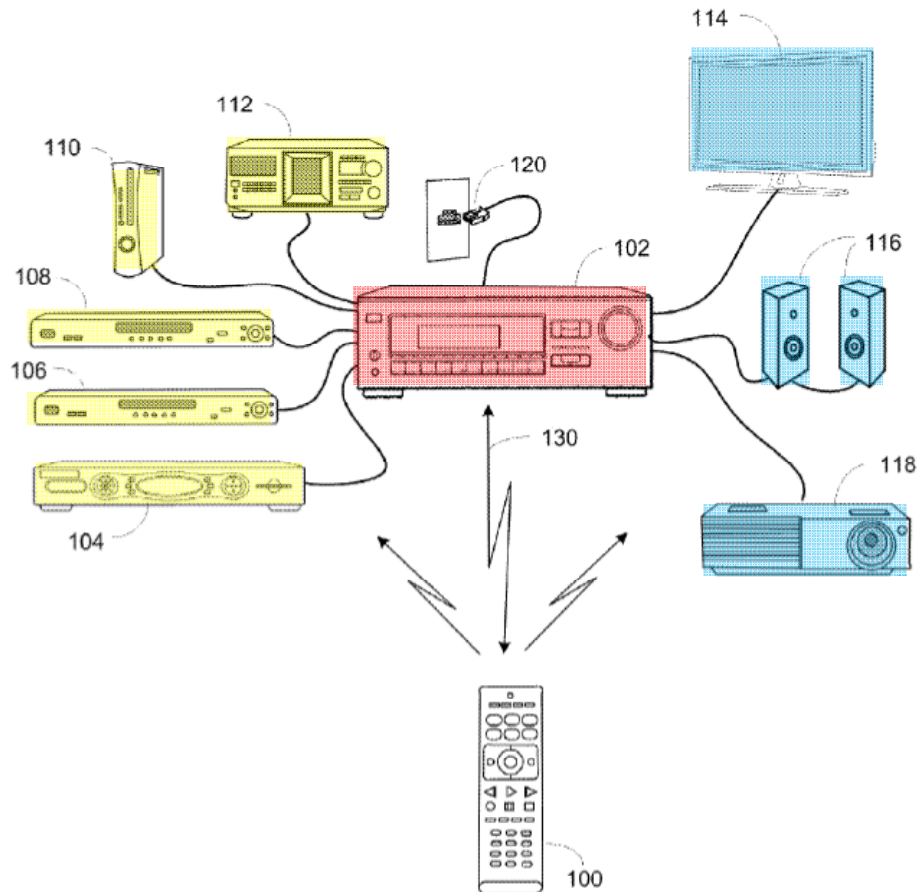


Figure 1

Appx.31. FIG. 1’s exemplary entertainment system includes a central device (or “entertainment device”) (colored red)—here, an AV receiver 102—that is coupled

to multiple media source devices (colored yellow), such as a set top box, a game console, and DVD and CD players, and multiple destination devices (colored blue), such as a television, a projector, and speakers. Appx.38(2:27-58). The AV receiver 102 functions to connect the currently desired media source to the desired destination device. *Id.* For example, an “AV receiver operating program” can be executed in a processor of the AV receiver 102 “to cause the routing of video and/or audio signals between the various inputs and outputs.” Appx.40(5:19-30).

FIG. 2 illustrates an exemplary controlling device of the FIG. 1 system. Appx.32 (reproduced below in full and partially to show the activity selection keys in more detail).

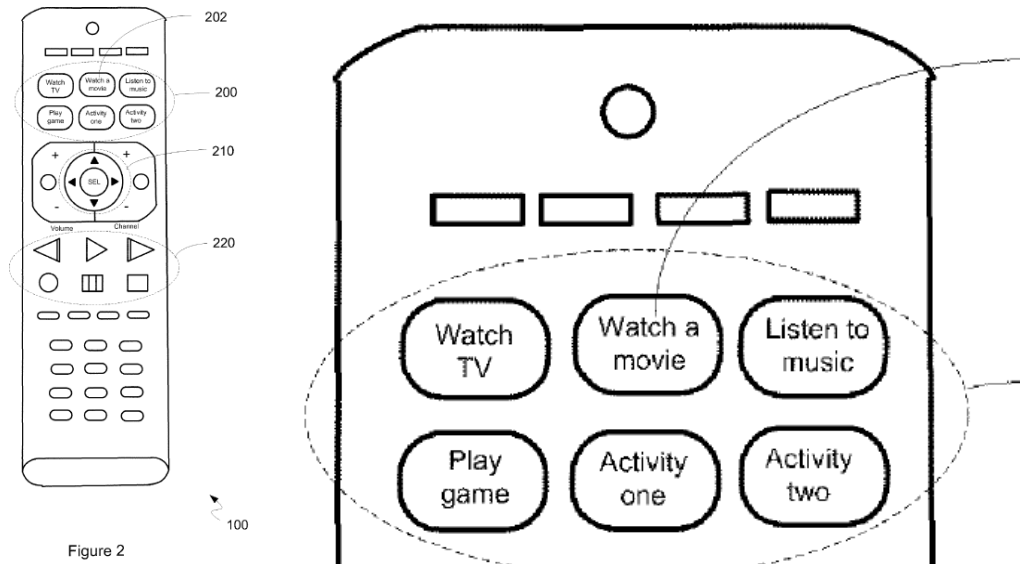


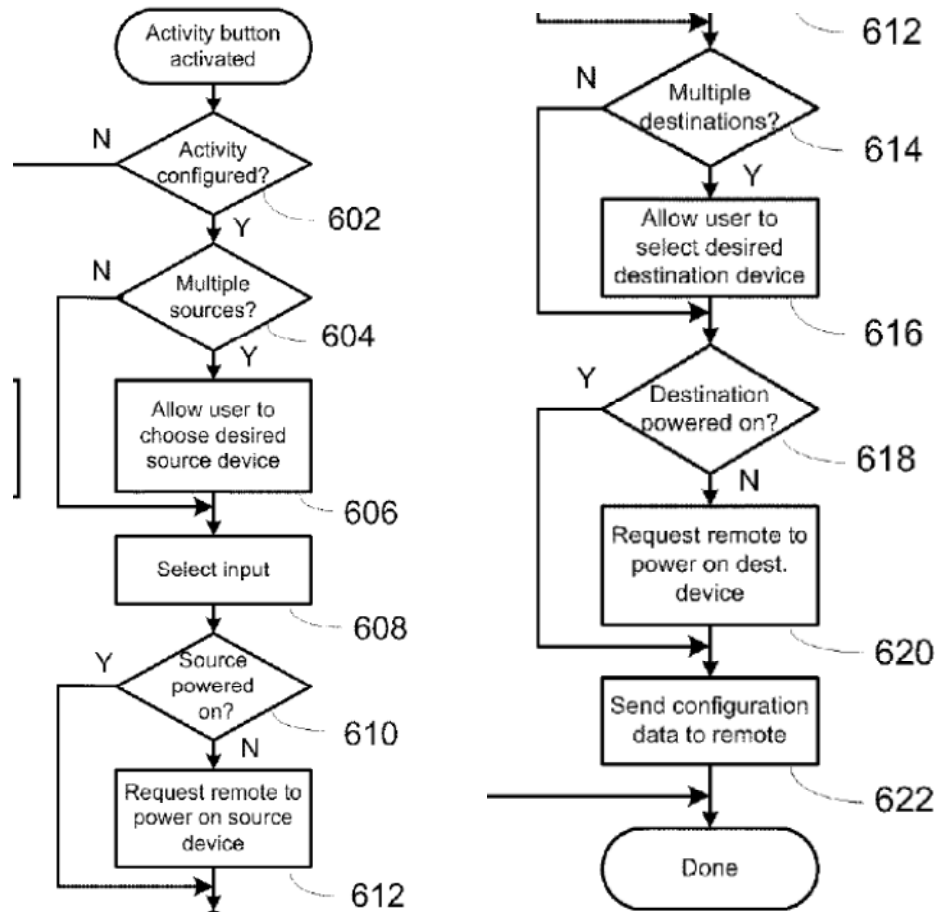
Figure 2

The exemplary remote controlling device 100 has a key for each of the “Watch TV,” “Watch a movie,” “Listen to music,” *etc.* activities. Appx.38-39(2:59-3:3). Activation of one of these activity selection keys “results in

transmission of a signal to the AV receiver to initiate certain previously defined configuration actions,” Appx.38(1:36-56), and “may cause AV receiver 102 and/or controlling device 100 to cooperatively place the exemplary home entertainment system into a user specified state which has been associated with that activity.” Appx.38-39(2:67-3:3). “In addition, certain controlling device command transmissions to other appliances in the home entertainment system may also be initiated as a result of said activity key activation, either unilaterally by the controlling device or at the request of the AV receiver.” Appx.38(1:45-49). The ’207 patent states that such cooperation between the AV receiver and the remote controlling device “may result in more reliable and user-friendly system operation” because “the AV receiver has access to appliance status information ... and the controlling device in turn has access to appliance command functions.” Appx.38(1:49-56).

The ’207 patent also discloses “*an exemplary embodiment* ... [in which] the AV receiver operating program may include programming which functions in cooperation with controlling device 100 to define and subsequently execute user-desired configuration of the home entertainment system.” Appx.40(5:43-48) (emphasis added). After the user defines an activity, “the activity configuration parameters may be finalized and stored in AV receiver memory.” Appx.40(6:36-

43). The execution of the activity configuration request is illustrated in FIG. 6 (reproduced below in part, omitted in part). Appx.36.



When the user actuates an activity button and if that activity is defined, the desired source device and the corresponding input of the AV receiver are selected. Appx.40-41(6:52-7:10) (steps 602-608). The AV receiver also determines whether the selected source device is powered on and, if not, issues a request to the remote controlling device to turn it on. Appx.41(7:10-22) (steps 610 and 612). Next, the destination device is selected and, if not powered on, a request is sent to the remote controlling device to turn it on. Appx.41(7:22-37) (steps 614-622). The other keys

of the remote controlling device may be configured to control the selected source and destination devices either automatically or in response to a transmission from the AV receiver. Appx.41(7:38-59).

4. Embodiments in Which the Configuration Is Stored and Used Outside the AV Receiver.

The specification does not require the configuration information to be stored in the central AV receiver, but rather broadly discloses that such information may be stored in multiple locations. For example, it states:

Alternatively, configuration data may be uploaded to a remote server for subsequent download to the AV receiver, copied to a memory stick or smart card for physical transfer, etc. Additionally, controlling device 100 may be coupled to the PC and become the repository for some or all of the configuration data, either for later transfer to AV receiver 102, or for direct action by controlling device 100.

Appx.42(9:5-12).

Consistent with this disclosure, the specification states that the remote control may either cooperate with the AV receiver or work alone to perform configuration functions, including powering off devices which are not participating in the desired activity.

Although not illustrated in the example of FIG. 6, in certain embodiments additional appliance configuration may be initiated by the AV receiver operating program and/or the controlling device operating program and performed by controlling device 100 ... Also, additional actions may be initiated by the AV receiver operating program and/or the controlling device operating program with respect to appliances not participating in an activity. For example, initiation of a “Listen to Music” activity may cause the controlling device itself, or

result in the issuance of requests to controlling device, to power off video display devices such as TV 114 or projector 118.

Appx.41(7:60-8:7).

Further, the specification teaches that, for unidirectional remote controls, the command and configuration functions may be performed by the remote control itself and not the AV receiver:

it will be appreciate[d] that many of the steps of the inventive methods may also be practiced in a system comprising a controlling device which is in unidirectional (inward) communication with the central switching device, in which case certain controlling device actions may be initiated autonomously as macro sequences using, for example, discrete appliance commands as are know [sic] in the art. Furthermore, in the case of a unidirectional controlling device, it is contemplated that, in lieu of receiving appliance indicating data from the AV receiver, the controlling device may be programmed whereby activation of a particular device mode key, e.g., cable, DVD, game player, etc., is used by the controlling device to configure groups of keys of the controlling device to communicate commands to a one of plural possible sources and/or destination appliances in a give activity mode....

Appx.42(9:26-40).

Indeed, the '207 specification discloses that the AV receiver may be substituted for any suitable device:

While described in the context of an AV receiver acting a central switching point for content streams in a home entertainment system, it will be appreciated that any other suitably equipped device, for example an advanced cable or satellite STB [set-top box], a personal computer, etc., may be substituted for an AV receiver in the practice of the instant invention.

Appx.42(9:17-22).

5. Embodiments in Which No Active Switching Between Multiple Sources or Destinations Takes Place.

While one exemplary embodiment of the '207 specification discusses the possibility of selecting between multiple possible sources and multiple possible destinations for the central AV receiver, the specification acknowledges that such switching between multiple sources need not occur. Describing the flowchart of FIG. 6, the '207 specification states that “at step 604 the AV receiver operating program determines from the configuration if multiple sources were configured. If so, at step 606 the options are displayed as illustrated at 630 and the user is prompted to select a desired source device, for example, by using the navigation and selection keys of the controlling device to highlight and select the desired source device. As will be appreciated, *if only one source device was configured at setup time, this step may be skipped.*” Appx.40-41(6:54-7:7) (emphasis added).

Similarly, the '207 specification teaches that there need not be “switching” between multiple outputs. Again referring to FIG. 6, the specification teaches that “at step 614 the AV receiver operating program determines if multiple destinations were configured. If so, at step 616 the options are displayed as illustrated at 632 and the user prompted to select a desired destination device as described above. Again, *if only one destination device was configured at setup time, this step may be skipped.*” Appx.41(7:22-28) (emphasis added). No internal switching is required in the AV receiver with respect to routing output signals to destinations,

because the '207 patent states that a desired destination device is powered on for an activity, Appx.36 (steps 618-620), and non-participating destination devices can be powered off, Appx.41(8:4-7). As a result, only the destination device that is powered on has the capability by default to receive and use the output signal, since all other potential output devices are powered off and hence no switching is required.

B. The Dubil Reference

The Dubil reference, U.S. Patent Publication No. 2003/0120831, entitled “Activity-Based Remote Control Device,” is prior art to the '207 patent.

Dubil is directed to “the control of a variety of devices comprising a multi-media system.” Appx.699([0002]). Dubil addresses problems arising when,

in some households, ... some occupants prefer to listen to the audio portion of any program through the home's 'surround-sound' system, while others prefer to listen to the audio portion of programs, such as the news programs and the like from the local television speakers. ... Additionally, in a complex multi-media system, with multiple input and output options, changing from one mode of entertainment to another can be a daunting task, particularly to non-technical users. Changing from watching a satellite-TV news broadcast to watching a DVD movie, for example, often requires changing the video input to the television, turning off the power to the satellite receiver, turning on the power to the DVD player, switching the audio from the television console to a stereophonic audio system, adjusting the audio system to the user's preferred listening level, and so on.

Appx.699([0006]-[0007]). An example of such a complex multi-media system with multiple input and output options is shown in FIG. 1 of Dubil. Appx.697 (reproduced below with colors added).

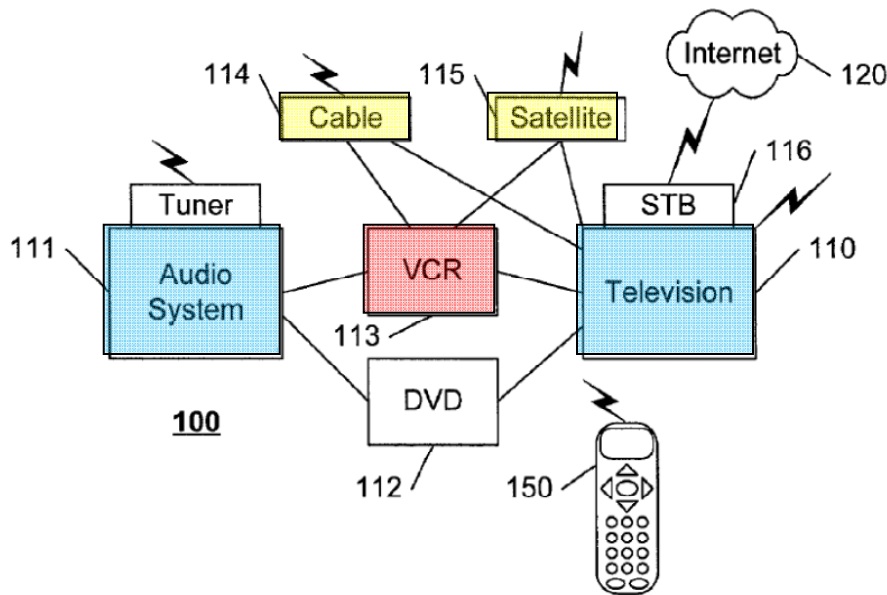


FIG. 1

Dubil's exemplary system includes multiple audio-video source devices (colored yellow), such as a cable interface 114 and a satellite receiver 115, multiple destination devices (colored blue), such as a television 110 and an audio system 111, and remote control 150. Appx.700([0017]). The system also includes a VCR 113 (colored red) which can receive, for optional recording, audio-visual information from either of the cable interface 114 or the satellite receiver 115. Appx.700([0017], [0019]). The VCR 113 can provide the received video and audio to the television 110 and, in the alternative, the video to the television 110

and the audio to the audio system 111. *Id.* Dubil expressly teaches that, “either before, or after, or in lieu of, the VCR device 113,” one can use “[o]ther storage devices, such as a ‘Tivo’ device.” Appx.700([0019]).

The remote control device 150 in Dubil’s system “eases the task of controlling components” because it “provides commands and options based on the configuration of components in a user’s environment, and based on a defined user activity. A storage device contains a user profile that includes the configuration of components at the user’s environment, and defined set of user activities.” Appx.696(Abstract); Appx.699-700([0008],[0009], [0017]).

Dubil’s storage device can store a data structure which describes the user activities. Appx.698(FIGS. 3 and 4). The data structure can specify how the remote control device is programmed for the specific activities. Appx.698(FIG. 3); Appx.700-701([0023]-[0026]). The data structure of Dubil can also specify the source of the audio-visual information and the destination of the audio information for the different activities. Appx.701([0027]-[0029]); Appx.698(FIG. 4) (reproduced below).

401 Activity	412 Genre	402 Source	403 Audio	404 Presets	405
Watch TV	News	Cable	TV	List A	415
	Sports	Satellite	TV	List B	
	Movies	Satellite	Surround	List C	
Watch DVD	Any	DVD	Surround	List C	
Watch VCR	Any	VCR	Stereo	List B	
Default	Any	(prior)	TV	Default	

FIG. 4

The data structure in FIG. 4 specifies that the activity of watching TV uses either the cable or satellite source (as specified in the source column 403) as an input, and the component which provides the sound output either the TV or surround depending on the genre of the media content (as specified in the audio column 404). Appx.701([0027]-[0029]).

Dubil's exemplary data structure also includes "a preferred list of presets 405." Appx.701([0028]). These "activity set" presets may include "a sequence of commands that are communicated to the individual components of the system to effect the indicated activity set." *Id.* Dubil explains that "most television display systems include an 'input' selection command to select the input to the television display from among the various components that are able to provide a video input, such as the DVD 112, the VCR 113, the cable receiver 114, and so on. ... The ListA 415 may also include command codes that activate or deactivate a recording device based on the user's preferences, and so on." *Id.*

Dubil's "activity sets" can be created using conventional menu-driven techniques that "allow a user to create an activity set via the remote control device 150, akin to the techniques provided to allow a user to program a VCR." Appx.702([0033]). Alternatively, an application program on a personal computer "collects the information from the user regarding the configuration of the user's equipment, and then creates one or more data sets that can be downloaded to the equipment to effect the configuration." Appx.702([0034]).

Dubil's FIG. 5 illustrates a block diagram of Dubil's "remote control system." Appx.698 (reproduced below).

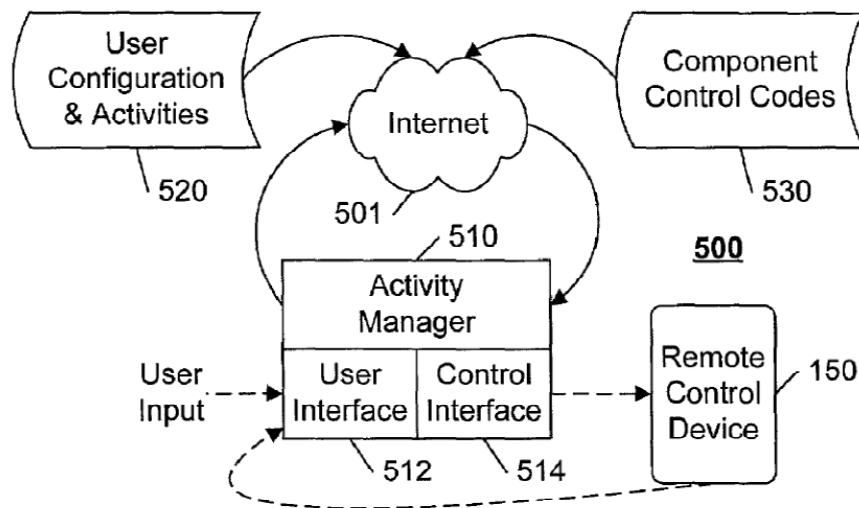


FIG. 5

In this block representation, a database 520 stores the user configurations and activity sets, and another database 530 stores the control codes for the remote control device 150. Appx.701([0030]). In Dubil, "the term database is used to identify a collection of data that is organized for retrieval of select information; this

collection of data may be distributed among a variety of storage devices and storage systems.” *Id.*

The block 510 represents an activity manager which receives user input via user interface 512.

The user invokes an activity set, using, for example, selection keys on the remote control device 150 Based on this selection input, the activity manager 510 accesses the database of user activity sets 520 to determine which component functions are being mapped to which keys on the remote control device 150.... If ... the user activity set 520 includes a preset list, ... the activity set manager 510 processes the preset list and provides the appropriate commands to the remote control device 150.

Appx.701([0031]).

In FIG. 5’s exemplary system, each device 510-530 is connected to the Internet which can provide communication and storage of information.

Appx.702([0037]).

In such an embodiment, a third party vendor may provide an Internet-based application program for creating the user configuration and activity sets 520. Thereafter, the compiled command codes corresponding to each activity set may be stored at the third party’s Internet site, or downloaded to a storage device at the user location, such as to a set-top box (STB 116 of FIG. 1) that is configured to provide the compiled code to the remote control device 150 on demand.

Id.

C. Procedural History

The Board’s construction of “configuration of the entertainment device” in its Final Written Decision is central to this appeal; therefore, a summary of the procedural history focusing on the evolving construction of this term and the novel construction adopted by the Board in its Final Written Decision may be useful.

1. Institution of the *Inter Partes* Review Based on a Broad Construction of “Configuration of the Entertainment Device.”

URC initiated this *inter partes* review by filing its petition on July 11, 2014 to seek review of claims 12-15 of the ’207 patent on various grounds, including invalidity under 35 U.S.C. § 102 as anticipated by Dubil. *See* Appx.47-108; Appx.111-113.¹ URC proposed constructions for several terms in claims 12-15, but not “configuration of the entertainment device,” a term present in all of the challenged claims. Appx.60-62. UEI’s Preliminary Response similarly did not propose a construction for “configuration of the entertainment device.” Appx.139-147.

On January 9, 2015, the Board instituted *inter partes* review of claims 13-15 after finding that URC had “shown a reasonable likelihood of prevailing in establishing that claims 13-15 are unpatentable under 35 U.S.C. §102 as

¹ Claims 12-15 correspond to the claims being asserted against URC by UEI in the district court litigation mentioned above.

anticipated by Dubil.” Appx.210. The Board construed the claim terms “device” and “activity key” based on the constructions proposed by the parties. Appx.169-199. Although neither party proposed a construction of “configuration of entertainment device,” the Board construed the term *sua sponte*. Appx.199. The Board posited two possible constructions. *See* A199-200. The Board explained that the term could be construed narrowly “to require transmission of a signal to the entertainment device such that the configuration thereof contemplates affirmatively selecting an AV input source and an AV output destination and affirmatively performing switching actions accordingly.” Appx.199. But, the Board decided to proceed based on a broader construction of the term. It explained that such a broader construction “would cause the claims to read on AV receivers and other entertainment devices that passively transmit signals from input to output appliances without necessarily engaging in any switching activity.” Appx.200. Thus,

the entertainment device and associated input and output appliances are “configured” by selectively powering on and powering off the input and output appliances so that, for example, only one input appliance supplies an active input signal to the entertainment device and only one output appliance renders the output signal.

Appx.199-200.

Based on this claim construction, the Board agreed with URC that Dubil discloses all the elements of claims 13-15. For example, the Board held that the

first two limitations of claim 13 (“associating a command value ...” and “causing the entertainment device to access and use the configuration ...”) were satisfied by Dubil because paragraphs 18 and 19 of Dubil “disclose an AV system configuration that includes an activity set that associates system functions with particular components to support a particular user activity, such as watching a satellite broadcast on television.” Appx.204-205 (citing Appx.697(FIG. 2A); Appx.700([0018], [0019])).

2. Disputes Over Construction of “Configuration of the Entertainment Device” Following Institution.

Following the Institution Decision, UEI filed its Patent Owner Response on March 25, 2015. In this Response, UEI argued that the Board should adopt the narrower construction mentioned in the Institution Decision—*i.e.*, that “configuration of the entertainment device” “require[s] transmission of a signal to the entertainment device such that the configuration thereof contemplates affirmatively selecting an AV input source and an AV output destination and affirmatively performing switching actions accordingly.” *See* Appx.276-280. UEI asserted that various exemplary embodiments of the entertainment system described in the ’207 patent specification required the active switching set forth in the narrower construction. *Id.* Based on this construction, UEI asserted that Dubil does not disclose affirmatively switching output destinations because the VCR operates as a pass-through device that simultaneously outputs the source

information to all of its AV outputs, rather than selecting a particular AV output destination. Appx.281-282.

In its Reply, URC explained that the '207 patent claims, specification, and figures all supported the Board's broader construction of "configuration of the entertainment device." Appx.326. Based on how the term is used in the claims, URC explained that "configuration of the entertainment device" should be broadly construed as "an indication of an input device to and an output device from the entertainment device."² Appx.327. Specifically, URC noted that claim 13 states that "the configuration of the entertainment device comprises at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device." Appx.327 (quoting Appx.43(12:15-21)). URC explained that the Abstract and specification similarly describe only the identification of an input device and output device, without limitation as to how the input and output device are indicated. Appx.328-329 (citing Appx.30(Abstract); Appx.38(1:45-48); Appx.41(8:9-18)). URC also submitted a Reply Declaration of its expert, James T. Geier, to show that its

² As URC explained at the hearing before the PTAB, URC's proposed construction post-institution—"an indication of an input device to and an output device from the entertainment device," Appx.327—is substantively identical to the Board's construction in its Institution Decision. Appx.424-428; *see also* Appx.326-327. URC therefore focuses here on the Board's formulation in its Institution Decision.

construction was consistent with how one of ordinary skill in the art would have understood the claim term. *See* Appx.1070-1071(¶¶ 17, 19); *see generally* Appx.1066-1082. URC opposed UEI's construction because it improperly imported limitations from the specification into the claim language based on exemplary embodiments. Appx.329-330.

3. The Board's Final Written Decision Reverses Its Earlier Construction of "Configuration of the Entertainment Device" and Finds Dubil Does Not Anticipate.

The Board heard oral argument on September 2, 2015 and issued its Final Written Decision on December 11, 2015. Appx.420-462; Appx.1-28. The Board found that claims 13-15 were not shown to be unpatentable as anticipated by Dubil. Appx.28. The Board's decision was based on an entirely new construction of the term "configuration of the entertainment device" not proposed by either party or previously suggested by the Board. *See* Appx.16.

Specifically, after rejecting both parties' proposed constructions and refusing to rely on the submitted expert testimony, Appx.9-12, the Board adopted a novel construction of "configuration of the entertainment device": "information stored in memory in the entertainment device that can be accessed and used to configure the entertainment device." Appx.16.

In applying this construction to the Dubil reference, the Board further narrowed the construction to require "actively switch[ing] between a plurality of

inputs and a plurality of outputs” and to require “a set of executable instructions and data stored in memory in the entertainment device that is first downloaded from a personal computer and is then accessed and used after the entertainment device receives a signal from the remote control that contains a command value that is associated with such configuration.” Appx.22-23. Contrary to the Institution Decision, the Board required both “active switching” of inputs and outputs and required “executable instructions and data” to be stored within a memory of the entertainment device and used wholly internally by that entertainment device to accomplish this “active switching.” *Id.*

The Board believed that particular passages in the specification provided a special meaning for “configuration of the entertainment device”—a meaning separate and apart from its plain and ordinary meaning consistent with dictionary definitions as the “arrangement internal to the entertainment device that would allow the entertainment device to connect to and communicate with input and output devices.” Appx.14 (relying on dictionary definitions).

Moreover, the Board found that the specification provided for two possible meanings of “configuration of the entertainment device.” Appx.15. The term could be construed as “the state or condition of the entertainment device *after* it has been configured.” *Id.* Or, it could be construed as “referring to information stored in memory in the entertainment device that can be accessed and used to

configure the entertainment device.” Appx.15-16. The Board chose the latter construction based on the specification’s description of a computer used to generate the configuration data then downloaded to the entertainment device. Appx.15 (citing Appx.41-42(8:19-9:8)). The Board stated, based on the specification, that

[A]*fter* the entertainment device is configured it exhibits a *configuration of the entertainment device*. However, *before* it is configured, the entertainment device stores in memory executable instructions and data (“*the final configuration*”) that is associated with an activity key command. *Id.* at 6:41. It stores the configuration information “for future use.” *Id.* at 6:39. The entertainment device later accesses and “uses” the configuration. *Id.*, Abstract. The memory in the entertainment device may store a plurality of sets of such executable instructions, each set of which also may be considered to be a *configuration of the entertainment device*. *Id.* at 5:43-48.

Appx.15-16 (emphases in original).

The Board provided no express construction of the phrase “access and use the configuration” (found in claims 13 and 14) or “the configuration ... downloaded” (found in claim 13). Appx.8-16. The Board instead referred to these terms in its discussion of the construction of “configuration of the entertainment device.” *Id.*

4. Based on Its New Construction, the Board Held Dubil Did Not Anticipate.

Based on this new construction, the Board held that Dubil does not disclose all the limitations of claims 13-15, either explicitly or inherently. The Board

agreed with URC that “[a] person of ordinary skill in the art would have understood that pressing an activity key on Dubil’s remote control would result in the transmission of a signal that contains a command value associated with the activity key that was pressed.” Appx.21. But the Board held that pressing a Dubil activity key does not associate a command value with a “configuration of the entertainment device.” *Id.* The Board rejected URC’s argument, supported by unrebutted expert testimony, that Dubil illustrates exemplary activity sets in which the source and destination devices are indicated for a desired activity (*e.g.*, the “Watch TV” activity) and that Dubil’s VCR actively selects between input devices and output devices. Appx.21-22. The Board held that “[w]hile it may be possible that the VCR could switch between sources and destinations, we are not persuaded that such functionality is necessarily present in Dubil for it to operate.” Appx.22. The Board further held that based on the construction first articulated in the Final Written Decision, URC failed to provide “evidence that Dubil’s VCR has memory that stores executable instructions and data in the form of a ‘*configuration of the entertainment device*’ that is downloaded from a computer and is accessed and used as claimed.” Appx.23 (emphasis in original).

With respect to the “access and use” limitation of claim 13, the Board also rejected URC’s arguments based on its new claim construction, concluding that

In summary, at most, Dubil discloses storing activity set information on a device that is configured to provide activity set information

(compiled code) *to the remote control device*. It does not disclose storing, in the entertainment device, executable instructions to configure the internal components of the entertainment device and then accessing and using such executable instructions as required by claim 13.

Appx.24-25 (emphasis in original). Finally, the Board rejected URC's argument that Dubil discloses the downloading limitation of the claims. Appx.25-26. The Board acknowledged that Dubil discloses a storage device, such as a set-top box, that can download the activity command sets, but found that Dubil does not explicitly disclose that the VCR could function as a storage device and that the mere possibility that it could so function is insufficient to establish anticipation. Appx.26 (citing Appx.702([0036], [0037])). The Board also determined that the command codes for activity sets that are downloaded in Dubil could not be a "configuration of the entertainment device" because they are provided to the remote control and not strictly for internal use in response to signals from the remote control. Appx.26.

Based on similar analysis and rationales, the Board held that claims 14 and 15 were not anticipated by Dubil. Appx.27-28.

SUMMARY OF ARGUMENT

The Board's decision that claims 13-15 of the '207 patent are not anticipated by the Dubil reference is based on an improper and entirely new construction of the claim term "configuration of the entertainment device" that neither party initially believed required construction at all.

The Board acknowledged in its Institution Decision that the term "configuration of the entertainment device" could reasonably be construed broadly and properly construed the term "to encompass AV system configuration which do not require active switching between input sources and output destinations at the AV Reciever/Entertainment Device." Appx.200. Under this construction, the entertainment device could be configured so that only one input and one output are used. Appx.199-200. The plain language of the challenged claims and the specification describe such configurations and therefore, this construction is consistent with all of the intrinsic evidence.

Nonetheless, the Board improperly narrowed its construction in its Final Written Decision and required the claimed "configuration" to be specific executable instructions stored in the "entertainment device" that must be downloaded to, accessed by, and used solely internally within that device to "actively switch" between multiple inputs and outputs. This construction is improper for several reasons. First and foremost, it is inconsistent with the

language of the claims, which define “configuration of the entertainment device” to merely require at least one input and one output. Appx.43(12:15-20, 12:50-56). Second, the construction relies exclusively on certain preferred embodiments described in the specification. But, it is axiomatic that such preferred embodiments cannot define the claims. Furthermore, in cherry-picking these preferred embodiments, the Board ignores entirely other embodiments in the specification that support a broader construction consistent with the claims’ language. A construction that focuses on particular preferred embodiments to the exclusion of the claim language and other embodiments cannot stand and should be reversed.

The Board’s improper claim construction directly led to its finding that the Dubil reference did not anticipate claims 13-15. The Board’s anticipation determination should be reversed in view of the proper construction because, as the Board admitted, Dubil describes a system that “can be configured by sending power on/off command to various devices and then passively routing the input and output signals through the VCR,” Appx.22, *i.e.*, without active switching. Moreover, even under the Board’s erroneous construction, the record demonstrates that Dubil anticipates.

For the reasons set forth below, URC urges the Court to reinstate the proper claim construction, and reverse the Board's anticipation determination, or, alternatively, vacate and remand to the Board.

ARGUMENT

I. Standard Of Review

The Board must give claims their broadest reasonable construction consistent with the specification. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1277-79 (Fed. Cir. 2015), *cert. granted*, 136 S. Ct. 890 (2016). This Court reviews the Board's claim construction according to the Supreme Court's decision in *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). Under *Teva*, underlying factual determinations concerning extrinsic evidence are reviewed for substantial evidence, while the Board's determinations based on the intrinsic evidence and the Board's ultimate construction of the claim are reviewed *de novo*. 135 S. Ct. at 841. Here, the Board asserted that its claim construction rested solely on the intrinsic evidence such that claim construction in this case is a pure legal conclusion reviewable under a *de novo* standard. *See Appx.12*.

Anticipation is a question of fact, reviewed for substantial evidence on appeal. *In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991).

"Substantial evidence is something less than the weight of the evidence but more than a mere scintilla of evidence ... and means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *In re Suitco*

Surface, Inc., 603 F.3d 1255, 1259 (Fed. Cir. 2010) (internal citations and quotations omitted).

II. The Board’s Final Written Decision Adopts an Erroneous Construction of the Claims.

As the Board acknowledged, “[a] claim construction analysis begins with, and is centered on, the claim language itself.” Appx.12 (citing *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001)). While the specification must be considered when construing the claims, it is axiomatic that the specification and particular embodiments described therein cannot be read into the claims and limit their scope. *See Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1347-48 (Fed. Cir. 2009); *see also Johnson & Johnson Assoc. Inc. v. R.E. Serv. Co, Inc.*, 285 F.3d 1046, 1052 (Fed. Cir. 2002) (*en banc*) (“Consistent with its scope definition and notice functions, the claim requirement presupposes that a patent applicant defines his invention in the claims, not the specification. After all, the claims, not the specification, provide the measure of the patentee’s right to exclude.”).

Claim terms are ordinarily given their ordinary and customary meaning, as they would be understood by a person of ordinary skill in the art at the time of the invention. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313-17 (Fed. Cir. 2005) (*en banc*). This is true whether the claims are being interpreted under the Broadest Reasonable Interpretation standard, which was applied by the Board in the present

matter, or using the *Phillips* claim construction standard applied by district courts. *See PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC*, 815 F.3d 734, 745 (Fed. Cir. 2016) (giving terms “their ordinary meaning” under the broadest reasonable interpretation); *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1352 (Fed. Cir. 2013) (same). And, regardless of the standard, “[t]he plain meaning of claim language ordinarily controls unless the patentee acts as his own lexicographer and provides a special definition for particular claim terms or the patentee disavows the ordinary scope of a claim term either in the specification or during prosecution.” *See InterDigital Commc'ns, LLC v. Int'l Trade Comm'n*, 690 F.3d 1318, 1324 (Fed. Cir. 2012) (citing *Phillips*, 415 F.3d at 1316).

A. The Board's Institution Decision Properly Construed the '207 Claim Term “Configuration of the Entertainment Device” and that Construction Should Have Been Retained in the Final Written Decision.

In its Institution Decision, the Board recognized that there are at least two possible constructions of the claim term “configuration of the entertainment device” and properly chose the broader of the two, consistent with the '207 specification. Appx.199-200. Specifically, the Board construed this term “to encompass AV [audio-visual] system configurations which do not require active switching between input sources and output destinations at the AV Receiver/Entertainment Device.” Appx.200.

Where a claim term is susceptible of two constructions, under the BRI standard, the Board should adopt the broader of the two constructions. *PPC Broadband*, 815 F.3d at 741-42. Although the Board in its Institution Decision expressly “reserved” the right to change its construction in the Final Written Decision, Appx.200, the Institution Decision identified and adopted a reasonable broader interpretation, and the Board committed legal error by abandoning that construction. *PPC Broadband*, 815 F.3d at 741-42; *see also In re Skvorecz*, 580 F.3d 1262, 1267-68 (Fed. Cir. 2009) (reversing Board’s decision based on a claim construction not adopting the broadest reasonable interpretation).

In its Institution Decision, the Board expressly acknowledged that the “configuration of the entertainment device,” in light of the specification, does not require internal or active switching between input sources and output destinations of that entertainment device. Appx.200. The Board’s conclusion was correct because the term “switching” appears nowhere in any of the challenged claims. Independent claims 13 and 14 only require the entertainment device to use “at least one of the plurality of devices ... as ... input source device” and “at least one of the plurality of devices ... as ... output destination device.” Appx.43(12:16-20, 12:51-57). Thus, the claims cover an entertainment device configured with a single input and single output, and do not require switching between multiple inputs or multiple outputs. For this reason, the Board’s new construction in its

Final Written Decision, which requires “active switching,” is inconsistent with the plain language of the claims.

Nor does the specification require “active switching,” as the term is used in the Board’s Final Written Decision. *Supra* §§ I.A.2, I.C.3. Specifically, the specification acknowledges that “switching” between multiple input sources need not occur. It states that “the user is prompted to select a desired source device, for example, by using the navigation and selection keys of the controlling device to highlight and select the desired source device. As will be appreciated, *if only one source device was configured at setup time, this step may be skipped.*”

Appx.41(7:1-7) (emphasis added). That is, the specification expressly discloses that selection of an input source is not necessary and hence describes instances where there is no switching between multiple inputs.

Similarly, the ’207 patent teaches that “switching” between multiple outputs is not required. Referring to FIG. 6, the specification states that “if multiple destinations were configured..., at step 616 the options are displayed as illustrated at 632 and the user prompted to select a desired destination device as described above. Again, *if only one destination device was configured at setup time, this step may be skipped.*” Appx.41(7:22-28) (emphasis added). Because the specification describes skipping the step of selecting between multiple outputs, the

disclosure contemplates configurations in which no “active switching” of outputs of the entertainment device is required.

In its Institution Decision, the Board also acknowledged that the entertainment device can be configured by selectively powering on and off its input and output appliances. Appx.200. The specification supports this conclusion because it teaches that using the remote control to selectively turn on and off an input and an output appliance is a disclosed embodiment or feature.

Appx.41(7:15-19, 7:33-37, 8:4-7). Specifically, in reference to the flow chart in FIG. 6, the specification states that “[i]f the selected source device is not powered on, in a preferred embodiment at step 612 a request may issued to controlling device 100 via bidirectional communication link 130 to transmit a ‘power on’ command to the source appliance. As will be appreciated, such a request would include data that functions to indicate to the controlling device 100 the intended target appliance for the ‘power on’ command.” Appx.41(7:15-22). The specification similarly discloses such selective powering on of destinations or output devices: “[i]f the selected destination device is not powered on, in a preferred embodiment at step 620 a request may be issued to controlling device 100 via bidirectional communication link 130 to transmit a ‘power on’ command to the destination appliance.” Appx.41(7:33-37). The specification also expressly teaches that initiation of a specific activity “may cause the controlling device itself,

or result in the issuance of requests to controlling device, to power off” appliances not participating in that activity. Appx.41(8:1-7).

More generally, the ’207 patent specification teaches that the remote control itself can store both command data and control protocols which are necessary to cause the remote control to transmit commands to control functional operations of an intended target appliance:

When a function key is actuated on the controlling device 100, the controlling device 100 may retrieve from the command data stored in memory 304, 305, 306 a command value and control protocol corresponding to the actuated function key and, where necessary, current device mode and transmit that command to an intended target appliance, e.g., STB 104, in a format recognizable by that appliance to thereby control one or more functional operations of that appliance.

Appx.39(3:57-64). Turning on/off is clearly a functional operation.

Thus, the specification supports the Board’s initial construction of the term “to encompass AV [audio-visual] system configurations which do not require active switching between input sources and output destinations at the AV Receiver/Entertainment Device.” Appx.200. Because the Board properly recognized the broader possible construction of “configuration of the entertainment device,” and in the Institution Decision properly adopted this broader construction, the Board committed legal error in abandoning that construction in the Final Written Decision.

B. The Board Committed Legal Error in Limiting the Construction of “Configuration of the Entertainment Device” to Require Storage of a Specific Type of Information, In a Specific Location, to Perform an Unclaimed Function of “Active Switching.”

In its Final Written Decision, the Board erroneously relied on a preferred embodiment of the ’207 patent in which the memory of the entertainment device stores configuration data and instructions to cause routing of signals between various inputs and outputs for different activities. Appx.15-16. The Board also limited the “configuration of the entertainment device” to information, including executable instructions, which are stored in memory of the entertainment device and which must be used to configure the entertainment device, including its internal components. *Id.*

The Board’s construction of the term “configuration of the entertainment device” as “referring to information stored in memory in the entertainment device that can be accessed and used to configure the entertainment device,” is incorrect for several reasons.

1. The Express Language of the Challenged Claims Defines “Configuration of the Entertainment Device” in a Manner Contrary to the Board’s Narrow Construction.

“Claim construction begins with the language of the claims themselves.”

Imaginal Systematic, LLC v. Leggett & Platt, Inc., 805 F.3d 1102, 1108 (Fed. Cir. 2015). But the Board’s construction ignores the explicit language of the claims. For example, claim 13, which the Board identified as being representative, states

“the configuration of the entertainment device comprising at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device.”

Appx43(12:15-20). The Board made no mention of this clear definition of “configuration of the entertainment device” in its analysis. *See* Appx.9-16.

Curiously, though, the Board cited other, less pertinent language from claim 13 to support its construction. For example, the Board pointed out that, according to claim 13, the “configuration of the entertainment device” can be downloaded from a computer and “can be ‘access[ed] and use[d]’ in association with a controlling device activity key command value.” Appx.16. The Board, however, ignored the explicit definition for the term “configuration of the entertainment device” stated in claim 13 and in claim 14’s “wherein” clause. *See* Appx.43(12:16-20, 12:50-56).

The Board also relied on a dictionary definition of “configuration” (which no party relied on) to justify reading “internal” into the construction of this term, despite the fact that that dictionary says nothing about “internal.” Appx.14 (quoting thefreedictionary.com website). The dictionary defines “configuration” as an “arrangement of parts.” *See id.* Here, the “arrangement of parts” of the entertainment device logically includes the input(s) and output(s) selected or

configured for that device because the plain language of the claim requires these to be included in the “configuration.” The Board’s conclusion that this definition necessitates “an arrangement internal to the entertainment device” is a logical leap without basis and contrary to the claim itself (and from that, the Board took the next step to rule that “an arrangement internal to the entertainment device” must require active internal switching between inputs and outputs). *See Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1377 (Fed. Cir. 2014), *cert denied*, 136 S. Ct. 59 (2015) (reversing claim construction that incorporated dictionary definition inconsistent with intrinsic evidence).

In applying its construction to Dubil, the Board impermissibly further narrowed that construction. The Board noted in its analysis of Dubil that “[p]etitioner cites to no explicit disclosure in Dubil where the VCR *actively switches* between a plurality of inputs and a plurality outputs. We have reviewed Dubil and find no such explicit disclosure.” Appx.21-22 (emphasis added). Thus, the Board imposed ***additional*** narrowing limitations requiring “active switching,” which are not a part of its stated construction and are nowhere mentioned in the specification. *See* Appx.329.

“Active switching” is not a proper claim limitation. The claim language and the specification contemplate situations where there is only a single input and single output, thus excluding any requirement of active switching between multiple

inputs and multiple outputs. *See supra* § I.A; *see also* Appx.834-835(555:10-19, 556:4-7).

In importing these narrowing limitations, the Board also ignores the testimony of URC's expert Mr. Geier with respect to this claim term, including his explanation of how one of ordinary skill would have understood the explicit definition recited in the claims. *See* Appx.1070(¶16). Mr. Geier testified that, from the point of view of one of skill in the art, the definition of this term in the claims was determinative. *Id.* Mr. Geier also testified that he saw no teaching or suggestion in the '207 patent that would limit how indicating of input devices and output devices is implemented. *See* Appx.1070(¶17).

Mr. Geier also cited specific portions of the '207 patent that support this construction. Appx.1071(¶19); *see* Appx.327-329. The Board, however, made no mention of any of this testimony. Further, while the Board referred to the testimony of UEI's expert Mr. Cook, it did not consider his testimony and instead relied exclusively on intrinsic evidence. *See* Appx.11-12. Because the Board made no factual determinations based on extrinsic evidence, no deference should be accorded its construction.

The construction adopted by the Board ignores the explicit definition provided in the claim language itself. It should be reversed.

2. The Board Improperly Imported Limitations into the Term “Configuration of the Entertainment Device” from One Embodiment and Ignored Contrary Disclosures in the Specification.

This Court has “cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.” *Falana v. Kent State Univ.*, 669 F.3d 1349, 1355 (Fed. Cir. 2012) (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327-28 (Fed. Cir. 2002)). Nonetheless, in addition to ignoring the language of the challenged claims, the Board’s construction of “configuration of the entertainment device” impermissibly imports limitations into the claims based on a specific embodiment of the specification.

As noted above, in its Final Written Decision, the Board viewed “configuration of the entertainment device” as having two possible meanings based on temporal considerations (“before” or “after” the device is configured). The Board explained that “[o]n the one hand, it can refer to the state or condition of the entertainment device *after* it has been configured.” Appx.15 (emphasis in original). Alternatively, the Board stated that the specification could support a construction encompassing activity *before* the device is configured, and adopted this construction:

[B]efore it is configured, the entertainment device stores in memory executable instructions and data (“*the final configuration*”) that is associated with an activity key command. *Id.* at 6:41. It stores the configuration information “for future use.” *Id.* at 6:39. The entertainment device then later accesses and “uses” the configuration.

Id., Abstract. The memory in the entertainment device may store a plurality of sets of such executable instructions, each set of which also may be considered to be a *configuration of the entertainment device*. *Id.* at 5:43–48 (“various activities”)

Appx.15-16 (emphases in original).

The portions of the specification on which the Board relied, col. 5:43-48 and 6:39-41 (Appx.40), discuss the FIG. 5 embodiment. The specification expressly states that “FIG. 5 illustrates an ***exemplary*** activity configuration setup process....” Appx.38(2:17-18) (emphasis added). Indeed, column 5, line 43 (cited by the Board) states that it is discussing “an ***exemplary embodiment*** described herein.” Appx.40(5:43) (emphasis added).

Thus, the Board relied on portions of the specification disclosing an embodiment in which information ***may*** be stored in the AV receiver; from this, the Board extrapolated that “configuration of the entertainment device” ***requires*** executable instructions which operate solely within, and automatically by, the entertainment device. The Board ignored disclosure of alternative embodiments where the configuration information can be stored elsewhere, including completely outside the entertainment device:

Alternatively, configuration data may be uploaded to a remote server for subsequent download to the AV receiver, copied to a memory stick or smart card for physical transfer, etc. Additionally, controlling device 100 may be coupled to the PC and become the repository for some or all of the configuration data, either for later transfer to AV receiver 102, or for direct action by controlling device 100.

Appx.42(9:5-12).

Because the specification discloses that configuration data can be stored and even used by “direct action” by devices outside the AV receiver (or entertainment device), the Board’s conclusion that “configuration of the entertainment device” must be limited to specific types of executable instructions stored internally within the device before the device is actually configured is incorrect. The Board’s construction limits the scope of the claims based on limitations improperly imported from a specific embodiment. *See Kara Tech*, 582 F.3d at 1348; *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1349-50 (Fed. Cir. 2013). There is no requirement anywhere in the specification or the challenged claims that the configuration of the entertainment device be stored exclusively in the entertainment device. Nor is there any requirement that the configuration of the entertainment device relate exclusively to the operation of the entertainment device. That is, the ’207 patent does not include any language that would preclude the Board’s correct broader construction in its Institution Decision, which does not impose either a temporal limitation or a limitation on where the configuration should be stored. *See Appx.330*.

To the contrary, the specification explains that “certain controlling device command transmissions to other appliances in the home entertainment system may also be initiated as a result of said activity key activation, either unilaterally by the

controlling device or at the request of the AV receiver.” Appx.38(1:45-48).

Further as both parties’ experts confirmed, the ’207 patent explains that activation of the activity key results in transmission of commands to appliances of the home entertainment system, not limited to the entertainment device. Appx.3555(¶51); Appx.1071(¶19). In addition, the ’207 patent teaches that the activity selection may be used to invoke a macro “to perform additional entertainment appliance configuration functions if desired.” Appx.41(8:9-18). The Board’s improper construction reads out these additional embodiments. This is a fundamental error. *See 3M Innovative Prop. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1331 (Fed. Cir. 2013); *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1383 (Fed. Cir. 2008) (“[o]ur court has cautioned against interpreting a claim term in a way that excludes disclosed embodiments”).

Because nothing in the specification precludes the Board’s correct broader construction in its Institution Decision, that construction is the appropriate construction under the broadest reasonable interpretation standard. *See Dorel Juvenile Grp., Inc. v. Graco Children’s Production, Inc.*, 429 F.3d 1043, 1046 (Fed. Cir. 2005). Under that construction, there is no limitation on where or how the configuration is stored or otherwise indicated, or that it be exclusively stored in any one device. Further, there is no requirement that the source or output device

be indicated by “active switching” (where such “active switching” finds no support anywhere in the ’207 patent). *See* Appx.329.

The Board’s broader construction in its Institution Decision properly takes into account the language of the claim as well as all embodiments discussed in the specification. It is therefore the correct construction. This Court should adopt that construction and reject the Board’s subsequent narrower construction in its Final Written Decision.

C. The Board Incorrectly Construed “Access and Use the Configuration” and “the Configuration ... Downloaded.”

The Board’s error in construing “configuration of the entertainment device” led the Board to similarly misconstrue the terms “access and use the configuration” and “the configuration ... downloaded.”

First, with respect to “access and use,” although the Board did not include this phrase among the terms for which an express claim construction was provided, Appx.8-9, the Board provided a construction in conjunction with “configuration of the entertainment device”: “‘*configuration of the entertainment device*,’ as it is used in claim 13, refers to a set of executable instructions and data stored in memory in the entertainment device that is first downloaded from a personal computer and is then *accessed and used* after the entertainment device receives a signal from the remote control that contains a command value that is associated with such configuration.” Appx.23 (emphasis added). The Board thus

incorporated its improper construction of “configuration of the entertainment device” in its analysis of “access and use.” For the reasons discussed above, that construction is wrong.

Second, with respect to the “download” of configuration term in claim 13, the Board similarly did not provide an express claim construction. Appx.8-9 (listing four terms for construction). But, as with “access and use,” the Board analyzed this term in conjunction with “configuration of the entertainment device.” Appx.25. Accordingly, just as with “access and use,” the Board improperly relied upon the legal error in its construction of “configuration of the entertainment device.”

III. The Dubil Reference Anticipates Claims 13-15 of the '207 Patent.

Under either of the Board’s constructions (in the Institution Decision or the Final Written Decision), the Dubil reference discloses all of the limitations of claims 13-15 of the '207 patent, including the limitations the Board found were not met. *See* Appx.75-85.

A. Under the Proper Claim Construction, Dubil Anticipates the '207 Patent Claims.

Under the Board’s broader construction in its Institution Decision, there is no dispute that Dubil discloses the claimed “configuration of the entertainment device.” Indeed, the Board did not dispute that Dubil discloses multiple activity sets in which the source and destination devices are indicated for a desired activity,

and admits that Dubil “discloses storing activity set information on a device that is configured to provide activity set information (compiled code) *to the remote control device.*” Appx.25 (emphasis in original). Because the claim requires only that the “configuration of the entertainment device” be accessed and used, without specific limitations on the activity and use, it does not matter that Dubil’s activity set information is sent to the remote control. Further, the ’207 patent expressly discloses sending configuration data to the remote control (*see, e.g.,* Step 622 of FIG. 6), thus Dubil’s identical disclosure clearly anticipates.

With respect to the “download” limitation, the Board admitted that Dubil discloses a variety of storage devices, such as a TIVO or a set-top box, Appx.24, and further admits that the “activity set command codes may be ... downloaded to a storage device at the user’s location,” Appx.26. The Board, however, stated that “[t]here is no explicit disclosure in Dubil that VCR 113 functions as the ‘storage device at the user location.’” *Id.* The Board is incorrect. Dubil expressly discloses that VCR 113 is a “storage device” and can be replaced by a ‘Tivo’ device which, as even the Board acknowledged, is a “storage device.”

Appx.700([0020]) (“provides to a VCR device 113 for optional recording. *Other storage devices, such as a ‘Tivo’ device, may be provided in the path, either before or after, or in lieu of, the VCR device 113.*”) (emphases added). Thus, according to the Board’s own admissions, Dubil discloses downloading the activity command

set to a “storage device,” such as a Tivo device, which anticipates the claim at least in the implementation where Dubil’s “‘Tivo’ device ...[is] provided ... in lieu of, the VCR device 113.” *Id.*

The Board’s description of the operation of Dubil makes plain that when the ’207 patent claims are properly construed, Dubil anticipates:

[t]he system configuration described by Petitioner just as easily could be accomplished by sending on/off commands to the various input and output components so that the desired input device is powered on and the non-desired input device is powered off. The same can be said of the output devices. Thus, the entertainment system, as a whole, can be configured by sending power on/off commands to various devices and then passively routing the input and output signals through the VCR.

Appx.22.

Under the proper construction, there is no limitation on where the configuration of the entertainment device is stored or accessed from. There is no requirement that the “configuration of the entertainment device” be limited to a single location either. And, there is no requirement that the “configuration of the entertainment device” include any sort of instructions for internal operation of the entertainment device. Thus, Dubil discloses all of the limitations of claims 13-15.

Accordingly, because this Court should reverse the Board’s claim construction, the Court should find that Dubil anticipates claims 13-15 under the proper claim construction. At a minimum, the Court should remand for the Board to reconsider its anticipation analysis under the correct construction.

B. Dubil Anticipates Under the Board’s Erroneous Claim Construction of “Configuration of the Entertainment Device” In Its Final Written Decision.

Even under the Board’s legally erroneous narrow claim construction, Dubil anticipates.

1. Dubil Anticipates the ’207 Claims Even Under the Board’s Erroneous Construction of “Configuration of the Entertainment Device.”

The Board, in the Final Written Decision, admitted that Dubil discloses downloading executable instructions and data from a personal computer and then accessing and using such instructions and data after receiving a command value from a remote control:

Dubil discloses that a user may use a personal computer to interface with a configuration application program. Ex. 1005 ¶ 34. The application program collects information from the user regarding the configuration of the user’s equipment and then creates one or more data sets *that can be downloaded “to the equipment” to effect the configuration. Id.* The activity manager 510 compiles the activity set into the appropriate set of command codes and stores the corresponding set of command codes with each activity set, *so that the codes are immediately available when the user invokes an activity set. Id.* ¶ 36. The activity set command codes may be stored on an internet site or *downloaded to a storage device* at the user’s location, such as a set-top box. *Id.* ¶ 37. Such storage device is configured to provide the activity set codes to the remote control device. *Id.*

Appx.25-26 (emphases added).

The Board also acknowledged that Dubil discloses “activity sets” to control functions of components in Dubil’s home entertainment system: “Dubil identifies

the components of the system. *Id.* ¶ 18. An ‘activity set’ associates select system functions to particular components to support a particular user activity. *Id.*”

Appx.18. The VCR in one of Dubil’s embodiments is the central or “hub” device for switching between different inputs and outputs, and corresponds to the claimed “entertainment device.” Appx.24 (“the VCR (Dubil’s ‘entertainment device’)”).

The Board further admitted that Dubil discloses a variety of storage devices, such as a TIVO or a set-top box, and further admits that the “activity set command codes may be ... downloaded to a storage device at the user’s location.” Appx.26.

Even though the VCR in one of Dubil’s embodiments is the central or “hub” device for switching between different inputs and outputs, the Board stated that “[t]here is no explicit disclosure in Dubil that VCR 113 functions as the ‘storage device at the user location.’” Appx.26. As discussed above, that is incorrect.

Dubil expressly discloses that VCR 113 is a “storage device” and can be replaced by a Tivo device which, as even the Board acknowledged, is a “storage device.”

With regard to active switching between inputs, the Board acknowledged that URC had submitted evidence that Dubil discloses selecting or switching between two different inputs (cable or satellite) and two different audio outputs (television speaker or surround sound). Appx.21-22. The Board erroneously rejected URC’s evidence, which was undisputed. There can be no denying that

Dubil's activity set (or executable instruction) for "Watch TV" provides for this precise type of active switching between multiple inputs and outputs:

401 Activity	412 Genre	402 Source	403 Audio	404 Presets
Watch TV	News	Cable	TV	List A
	Sports	Satellite	TV	List B
	Movies	Satellite	Surround	List C
Watch DVD	Any	DVD	Surround	List C
Watch VCR	Any	VCR	Stereo	List B
Default	Any	(prior)	TV	Default

FIG. 4

Appx.698(Fig. 4) (annotations added).

UEI's expert Mr. Cook conceded that Dubil discloses that the "Watch TV" activity set includes selecting either the cable interface or satellite receiver as the input device, and selecting either the television or surround sound (audio system) as the audio output device. Appx.886(607:10-15); Appx.890(611:3-6); *see also* Appx.1073(¶25). Although Mr. Cook argued that Dubil's VCR "does not affirmatively select an AV *output destination* or affirmatively perform switching actions to a particular AV *output destination*" because "the AV source information is routed directly to *all AV outputs* of the VCR," Appx.3556 (¶¶53-54) (emphases added), he never

disputed that Dubil's VCR actively selects its input.³ Thus, undisputed evidence shows that Dubil's VCR does perform active switching of its input. Appx.1073 ¶ 25.

Accordingly, not only is the Board's construction incorrect as explained above, the Board also erred in applying this construction in its analysis of Dubil. Even if this Court does not correct the Board's claim construction, the Court should reverse the Board's application of that construction to Dubil.

2. The Board's Legally Erroneous Constructions of "Access and Use" and "Download" Incorrectly Led to the Conclusion That Dubil Does Not Anticipate.

The Board ignored the undisputed disclosure in Dubil that teaches to "access and use" the configuration of the entertainment device. As shown above, Dubil FIG. 4 clearly shows an activity set (or configuration instructions) which is accessed and used by the user by pressing corresponding commands from the remote control, such as to select the cable or satellite input, or to select the TV or surround sound audio output. Appx.698(Fig. 4). This operation of Dubil is undisputed.

³ Such an operation, where the input of the central device is actively selected and the selected input is output to all of the connected destination devices, is consistent with FIG. 6 of the '207 patent, which has an express "Select input" step 608, but the output is selected only by powering on the desired destination device, *see* steps 618-620. Appx.36.

Additionally, the Board admitted that Dubil generally discloses using a remote control to access and use different inputs and outputs for an activity set. Appx.23-24.

The Board's assertion that this admitted operation of Dubil fails to disclose "accessing and using" the configuration appears based either on the incorrect construction of "configuration of the entertainment device" or an inexplicable and clearly incorrect illogical leap. Appx.24. Accordingly, the Board's ruling that Dubil fails to disclose the "access and use" limitation of the '207 patent claims should be reversed.

The Board ignored the undisputed disclosure in Dubil that teaches to "download" the configuration of its entertainment device. As explained above, the Board admits that Dubil discloses a personal computer which collects configuration information, creates activity sets, and stores the command codes at a storage device at the user location. *Supra* at p. 54 (quoting Appx.25-26). The Board expressly relied on the incorrect construction of "configuration of the entertainment device" to find that this undisputed disclosure of "downloading" in Dubil is insufficient, because the Board required the "configuration of the entertainment device" to be stored or downloaded to one particular location (internal memory of the entertainment device). Appx.26. Further, the Board ignored its own admission that Dubil discloses that data can be stored "among a

variety of storage devices, such as a set-top box (STB) or a TIVO.” Appx.24. The Board’s incorrect statement that there is a failure to disclose storing configuration data in Dubil’s VCR is inexplicable, because Dubil admittedly discloses substituting any suitable storage device for that VCR. *See* Appx.26; Appx.700(¶19) (“Other storage devices, such as a ‘Tivo’ device, may be provided ... in lieu of, the VCR device 113.”). Accordingly, the Board’s ruling that Dubil fails to disclose the “download” limitation of ’207 patent claim 13 should be reversed.

CONCLUSION

For the reasons stated above, the Court should reverse the Board’s Final Written Decision and hold that claims 13-15 of the ’207 patent are unpatentable as anticipated by Dubil. In the alternative, the Court should vacate the Board’s decision and remand for reconsideration in light of a proper claim construction.

Dated: May 16, 2016

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CERTIFICATE OF SERVICE

I hereby certify that on May 16, 2016, a true and correct copy of the foregoing was timely filed with the Clerk of the Court using the appellate CM/ECF system, which will send notifications to all counsel registered to receive electronic notices.

By: /s/ Peter H. Kang

CERTIFICATE OF COMPLIANCE

1. This brief complies with the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B) because according to the word count function of the word-processing program used to prepare the brief, the brief contains 12,099 words, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii) and Federal Circuit Rule 32(b).

2. This brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6) because the brief has been prepared in a proportionally spaced typeface using Microsoft Word 2007 in 14-point Times New Roman font.

Dated: May 16, 2016

By: /s/ Peter H. Kang

ADDENDUM

ADDENDUM

Final Written Decision (December 10, 2015).....	Appx.1
US Patent 8,243,207.....	Appx.30

Trials@uspto.gov

571-272-7822

Paper 36

Entered: December 10, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIVERSAL REMOTE CONTROL, INC.,

Petitioner,

v.

UNIVERSAL ELECTRONICS, INC.,

Patent Owner.

Case IPR2014-01146

Patent 8,243,207 B2

Before HOWARD B. BLANKENSHIP, SALLY C. MEDLEY, and
WILLIAM A. CAPP, *Administrative Patent Judges*.

CAPP, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

IPR2014-01146
Patent 8,243,207 B2

Petitioner Universal Remote Control, Inc. filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 12–15 of U.S. Patent No. 8,243,207 B2 (Ex. 1001, the “’207 patent”). We issued a Decision to Institute an *inter partes* review of claims 13–15 of the ’207 patent. Paper 9 (“DI”). After institution of trial, Patent Owner Universal Electronics, Inc. filed a Patent Owner’s Response (Paper 16, “PO Resp.”) and Petitioner filed a Petitioner’s Reply (Paper 22, “Reply”). We have jurisdiction under 35 U.S.C. § 318(a).

The instant case came before the Board for a regularly scheduled oral hearing on the merits on September 2, 2015, the transcript of which is entered as Paper 35 (“Tr.”). Also before the Board is Petitioner’s Motion to Exclude. Papers 26, 30, and 32.

After considering the evidence and arguments of counsel and for the reasons set forth below, we determine that Petitioner has not met its burden of showing, by a preponderance of the evidence, that claims 13–15 of the ’207 patent are unpatentable.

Related Proceedings

Petitioner states that claims 13-15 of the ’207 patent are involved in *Universal Electronics Inc., v. Universal Remote Control, Inc.*, No. SACV 13-00984 AG (C.D. Cal.).

I. BACKGROUND

A. The ’207 Patent (Ex. 1001)

The ’207 patent, titled System and Method for Activity Based Configuration of an Entertainment System, relates to methods for configuring multi-input and/or multi-output home entertainment systems. Ex. 1001, 1:31–33. The invention routes the outputs and inputs of the

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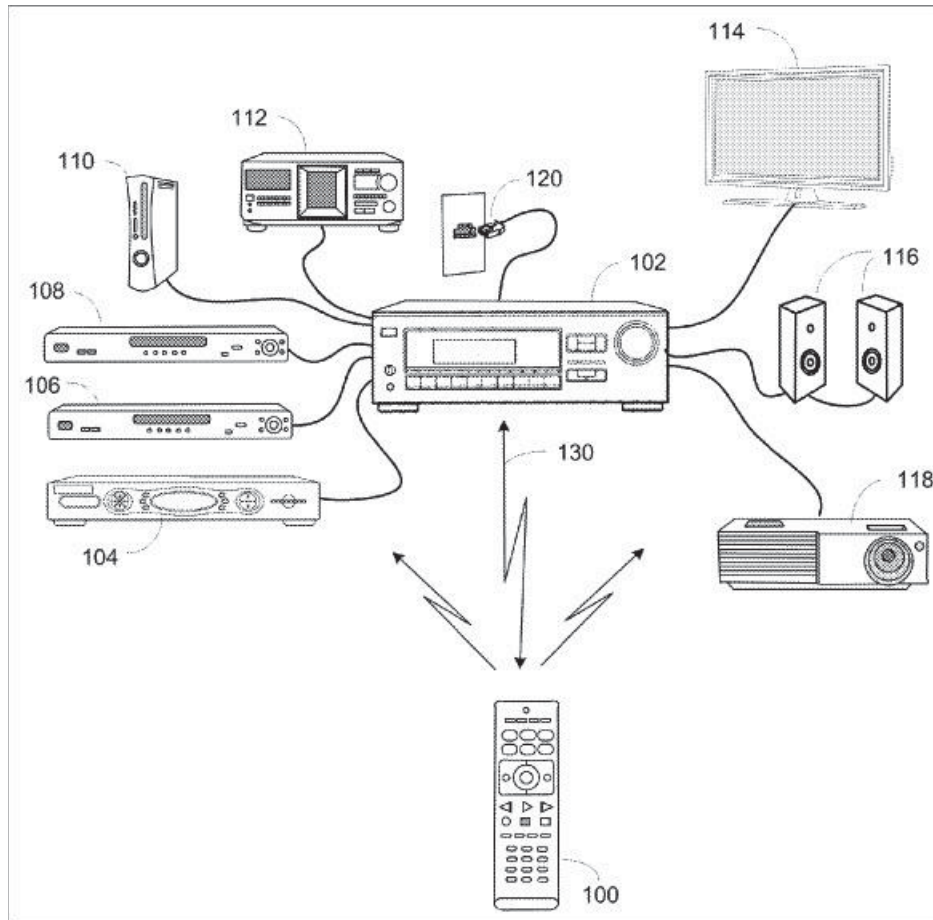
various components of an audio/visual (“AV”) system through one central device, such as an AV receiver, that is referred to generically as the “entertainment device.” *Id.* at Abstract, 1:34–36, 9:17–22, claim 13.

A personal computer is used to generate activity configuration settings. *Id.* at 8:19–67. The user then downloads configuration data from the personal computer to the entertainment device. *Id.* at 9:1–8. Activity configuration parameters are stored in memory of the entertainment device for future use in configuration of the home entertainment system when an indicated activity is requested. *Id.* at 6:39–41. The stored configuration is associated with a command value corresponding to an activity key on a remote control device. *Id.* at 6:41–43. Thereafter, the entertainment device serves as a central switching point for content streams in a home entertainment system. *Id.* at 9:13–49.

After a configuration is downloaded to or otherwise stored on the entertainment device, the invention contemplates sending a signal from a universal remote control device to the entertainment device in order to initiate a pre-defined configuration of the home entertainment system. *Id.* at 1:37–45. In addition to the control signals sent to the central entertainment device, the invention also contemplates sending control signals to other appliances in the home entertainment system. *Id.* at 1:45–50. These signals to the other appliances can be transmitted directly from the remote control to the other appliances or indirectly by a signal transmitted from the remote to the central entertainment device, which, in turn, transmits control signals to the other appliances. *Id.* Thus, activation of a device mode key may cause the transmission of data to the central entertainment device to cause the entertainment device to select one of multiple possible sources and/or

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destinations. *Id.* at 9:44–49. This feature takes advantage of the fact that the entertainment device has access to appliance status information not available to the remote control device and the remote control device, in turn, has access to appliance command functions not available to the entertainment device. *Id.* at 1:49–57. Figure 1 of the '207 patent is shown below.



'207 Patent – Figure 1

Figure 1 illustrates an AV system in which the outputs of source appliances such as set top box 104, first DVD player 106, second DVD player 108, game console 110, and CD changer 112 are all connected as inputs to an AV receiver or “entertainment device” 102. *Id.* at 2:27–32. AV receiver 102 (the entertainment device) switches the input stream to designated outputs which are connected to various home entertainment

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system devices such as TV 114, projector 118, and/or speakers 116. *Id.* at 2:33–38. Also illustrated is a universal remote control or “controlling device” 100 that transmits commands to the appliances. *Id.* at 2:44–46.

B. Illustrative Claim

We instituted a trial on Petitioner’s challenge to claims 13–15. DI 20.

Claim 13, reproduced below, is an independent claim:

13. A method for configuring an audio visual entertainment device in communication with a plurality of devices for an activity, comprising:

associating a command value corresponding to an activity key of a controlling device with a configuration of the entertainment device, the configuration of the entertainment device comprising at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device; and

causing the entertainment device to access and use the configuration associated with the command value corresponding to the activity key of the controlling device in response to the entertainment device receiving from the controlling device a signal which includes the command value corresponding to the activity key of the controlling device;

wherein the configuration of the entertainment device is downloaded into the entertainment device from a computing device in communication with the entertainment device and

wherein a configuration of the controlling device in which an activation of one or more command keys of the controlling device will cause the controlling device to communicate commands to the one or more of the audio visual source device and the audio visual output destination device is downloaded into the controlling device from a computing device in communication with the controlling device.

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C. The Asserted Grounds of Unpatentability

Petitioner challenges claims 13–15 of the '207 patent under 35 U.S.C. § 102 as anticipated by U.S. Patent Pub. 2003/0120831 A1, published June 26, 2003 (Dubil). Ex. 1005. Petitioner supports its position with declaration testimony from James T. Geier. Ex. 1003.

II. MOTION TO EXCLUDE EVIDENCE

Petitioner moves to exclude deposition testimony from Patent Owner's expert, Mr. Cook, elicited on re-direct examination. Paper 26, 1. Petitioner objects to counsel's redirect examination of Mr. Cook as constituting leading questions. Paper 26, 1. Patent Owner opposes the motion. Paper 30. Petitioner filed a reply to Patent Owner's opposition. Paper 32.

During re-direct examination, counsel for Patent Owner asked its own expert witness, Mr. Cook, three questions. Ex. 1054, 727:14-16; 727:24-728:1; and 728:9–10. Counsel did not ask open ended questions designed to elicit a narrative description or explanation. *Id.* Rather, the questions were phrased narrowly so as to elicit either a "yes" or "no" answer. *Id.*

The admissibility of evidence in an IPR proceeding generally is governed by the Federal Rules of Evidence. *See* 37 C.F.R. § 42.62(a), *Office Patent Trial Practice Guide*, 77 Fed. Reg. 48758. Under Federal Rule of Evidence 611(c), leading questions should not be used on the direct examination of a witness except as may be necessary to develop the witness' testimony. "A leading question is one that suggests to the witness the answer desired by the examiner." McCormick, EVIDENCE § 6 (7th ed. 2013). Questions that begin, "Isn't it true that" or "Don't you agree that" typically suggest the answer and are leading. Other types of questions, such

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as questions that call merely for a yes or no answer or that ask the witness to choose between alternatives posed by the questioner, may or may not be leading, depending on the context in which the question is asked, the tone of voice employed, and the body language or conduct of counsel. *See, e.g., United States v. Warf*, 529 F.2d 1170, 1174 (5th Cir. 1976) (prosecutor improperly led witness to make identification by pointing at the accused).

Patent Owner argues that none of the questions posed by counsel gave Mr. Cook an indication of the desired answer. Paper 30, 3. In reply, Petitioner points to contextual cues in the questions that it asserts suggest an answer. Paper 32, 2–3.¹

The re-direct examination of Mr. Cook took place by deposition outside of our presence. We did not have an opportunity to view the demeanor of the witness or counsel. Neither did we have an opportunity to observe any non-verbal cues such as tone of voice, gestures, or other body language of interrogating counsel. Nevertheless, we can observe from the overall context of the questions whether counsel was leading Mr. Cook. We agree with Petitioner that counsel’s questions, while nominally phrased to elicit either a “yes” or “no” answer, also contained contextual cues sufficient to suggest the answer that counsel desired to elicit. The three questions that were asked of Mr. Cook on re-direct examination are impermissible leading questions under Federal Rule of Evidence 611. We GRANT Petitioner’s motion to exclude the re-direct examination of Mr. Cook.

¹ First question – “setting a VCR timer” Ex. 1054, 727:14;
 Second question – “explicitly state” *Id.* at 727:24; and
 Third question – “Does Dubil teach or suggest *any way* that . . .” *Id.* at 728:9–10 (emphasis added).

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III. CLAIM INTERPRETATION

In an *inter partes* review, claims are given their broadest reasonable interpretation consistent with the specification. *See* 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278 (Fed. Cir. 2015). Within this framework, terms generally are given their ordinary and customary meaning, as understood by a person of ordinary skill in the art, in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007), citing *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

1. “device” versus “appliance” (Claim 13)²

In our Decision to Institute, we construed these terms such that when the claims refer to either devices or appliances that serve as either input sources or output destinations that are connected to the entertainment device, these terms are used interchangeably in the Specification and the claims and we construed them as having the same meaning. DI 6–7. The parties have not brought anything to our attention to cause us to modify this construction for purposes of the final written decision.

2. “entertainment device” (Claims 13 and 14)

The Specification states:

While described in the context of an AV receiver acting a central switching point for content streams in a home entertainment system, it will be appreciated that any other suitably equipped device, for example an advanced cable or satellite STB, a personal computer, etc., may be substituted for an AV receiver in the practice of the instant invention.

² The term “appliance” appears in claim 12. Ex. 1001, claim 12. Claim 12 was challenged in the Petition, however, we did not institute a trial as to claim 12. DI.

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Ex. 1001, 9:17–22. Consistent with the foregoing disclosure, in our Decision to Institute, we construed “entertainment device” to encompass AV receivers and substantially similar devices that are capable of being connected to a plurality of AV input sources and a plurality of AV output destinations. DI 7. Neither party argues for a different construction in their respective Patent Owner’s Response and Petitioner’s Reply.

3. *“activity key” (Claims 13 and 14)*

In the Decision to Institute, we adopted Patent Owner’s proposed construction: “a key that, upon activation, transmits a signal to an entertainment device that corresponds to a previously defined configuration for an activity.” DI 8–9.

In its Reply, Petitioner states that our construction in the Decision to Institute is narrower than necessary. Reply 2. Petitioner does not otherwise argue for a different construction in its Reply. We maintain our construction of this term for the reasons set forth in our Decision to Institute.

4. *“configuration of the entertainment device” (Claims 13 and 14)*

Petitioner’s proposed construction:

an indication of an input device to and an output device from the entertainment device.

Reply 4.

Patent Owner’s proposed construction:

requires transmission of a signal to the entertainment device such that the configuration thereof contemplates affirmatively selecting an AV input source and an AV output destination and affirmatively performing switching actions accordingly.

PO Resp. 10.

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Neither party proposed a construction of this term in their respective Petition or Preliminary Response. In our Decision to Institute, we noted that these terms are susceptible to more than one construction. DI 9–10. In the absence of receiving proposed constructions from either party, we construed “configuration of the entertainment device,” on a preliminary basis, as encompassing home entertainment system configurations that do not require active switching between input sources and output destinations at the entertainment device. *Id.*

Petitioner argues that our Decision to Institute acknowledged that there are two reasonable interpretations and our governing rules necessarily require *de facto* adoption of the broader interpretation. Pet. 3. We reject this argument. *See Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (even under the broadest reasonable interpretation, the Board's construction cannot be divorced from the specification and the record evidence). In our Decision to Institute, we gave a relatively broad construction, on a preliminary basis, to provide the parties with an opportunity to propose their own constructions and brief the issue with support from the record, including intrinsic evidence in the Specification. DI 10. We indicated that our interim construction did not foreclose us from using a different construction at a later point in the proceeding upon the development of a more complete record. *Id.* at 10 n.6.³

Petitioner argues that Patent Owner's construction improperly imports additional limitations into the claim. Reply 6–7. Petitioner challenges Patent Owner's reliance on selected passages of the Specification as

³ Although we suggested two possible constructions in our Decision to Institute, both possibilities were preliminary in nature and we are not constrained to adopt either of them for purposes of this final decision.

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supporting Patent Owner's claim construction, arguing that such passages relate to embodiments of the invention that are merely exemplary. *Id.* Petitioner argues that including "affirmatively performing switching actions" in the construction is not present in the claim language as written. *Id.* Petitioner also argues that Patent Owner's construction improperly imports "transmission of a signal" into the claim and that transmission of a signal is not required by the claim language. *Id.*

Patent Owner argues that the Specification supports a construction that requires active switching in the entertainment device. PO Resp. 7-9, citing Ex. 1001, 2:27-37; 1:34-42; 4:63-5:3. Patent Owner relies on testimony from Mr. Cook stating that the entertainment device must implement switching functionality in some manner. Ex. 2029 ¶¶ 38-46.

Extrinsic evidence in the form of expert testimony can be useful to a court for a variety of purposes, such as to provide background on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field. *See Phillips*, 415 F.3d at 1318. However, conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court. *Id.* The Federal Circuit cautions us to discount expert testimony that is at odds with the written record of the patent. *Id.* The Federal Circuit cautions us that extrinsic evidence in general is less reliable than the patent and its prosecution history in determining how to read claim terms. *Id.* Expert testimony is generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence. *Id.* We

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have reviewed Mr. Cook's testimony at paragraphs 38–46 of his declaration and find it unhelpful in construing this term. Thus, our claim construction analysis will focus primarily on the intrinsic record before us.

A claim construction analysis begins with, and is centered on, the claim language itself. *See Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001). In the instant case, claim 13 is directed to a method for configuring an entertainment device. Ex. 1001, claim 13. Claim 13 differentiates between a configuration “*of the entertainment device*” and a configuration “*of the controlling device.*” *Id.* While the claim language is used in the context of an entertainment system that includes an entertainment device in communication with a plurality of devices, there is no explicit mention of a configuration *of the entertainment system* as a whole. *Id.* In the first step, the method associates a command value of a controlling device activity key with a *configuration of the entertainment device*. *Id.* Such configuration includes at least one input device and at least one output device. *Id.* In the second step of the method, the *configuration* is accessed and used by the entertainment device. *Id.* The third step of the method specifies that the *configuration of the entertainment device* is downloaded *into the entertainment device* from a computing device. *Id.*

Similarly, claim 14 is directed to a method of configuring an entertainment device. *Id.*, claim 14. In the first step, the entertainment device receives a *configuration request* signal that includes a controlling device activity key command value. *Id.* In the second step, there is an association between the command value and a *configuration of the entertainment device*. *Id.* The configuration includes at least one input

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device and at least one output device. *Id.* In the third step, the entertainment device *accesses and uses* the configuration. *Id.*

The “ordinary and customary meaning of a claim term” is that meaning that a person of ordinary skill in the art in question, at the time of the invention, would have understood the claim to mean. *See Translogic Tech.*, 504 F.3d at 1257; *Phillips*, 415 F.3d at 1313. Claims should be read in light of the specification and teachings in the underlying patent. *See Proxyconn*, 789 F.3d at 1298.⁴

In the instant case, the Specification discloses that activation of an activity key on the controlling device results in transmission of a signal to the entertainment device to “initiate certain previously defined configuration actions.” Ex. 1001, 1:40–43. The entertainment device includes a control processor 400 coupled to a memory 402. *Id.* at 4:51–56. The memory stores executable instructions to control operation of the entertainment device. *Id.* at 5:19–23. The processor 400 may be programmed to cause routing of signals between various inputs and outputs. *Id.* at 5:23–27.

Furthermore, the Specification discloses a method whereby a personal computer may be used to generate command values and associated configuration choices. Ex. 1001, 8:19–67. After such activity on the personal computer is completed, the “resulting configuration data” is downloaded into the entertainment device. *Id.* at 9:1–8.

⁴ The PTO also should consult the patent’s prosecution history in proceedings in which the patent has been brought back to the agency for a second review. *Id.* Although Petitioner filed the prosecution history in the record (Ex. 1002), neither party cites to the prosecution history in their respective claim construction briefing.

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Thus, as “*configuration of the entertainment device*” is used in the Specification and the claims, it is an entity or construct that can be “downloaded” from a personal computer to an entertainment device. Ex. 1001, claim 13. It is similarly a construct or entity that can be “access[ed] and use[d].” *Id.* Furthermore, the “configuration” pertains to the entertainment device, as opposed to the controlling device or audio/visual entertainment system as a whole. Finally, the term “*configuration of the entertainment device*” appears to be used interchangeably with “configuration data.” *See id.* at 9:2.

Judges are free to consult dictionaries at any time when construing claim terms so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1585 n.6 (Fed. Cir. 1996). The plain English language dictionary meaning of “configuration” is “the arrangement of the parts of something.”⁵ In the context of computer science, it refers to the particular choice of hardware items and their interconnection that makes up a particular computer system.⁶

Under the common English language definition, a *configuration of the entertainment system*, as a whole, would refer to the arrangement and interconnection of the entertainment device with its various input source and output destination devices. Similarly, a *configuration of the entertainment device* would refer to an arrangement internal to the entertainment device that would allow the entertainment device to connect to and communicate with input and output devices.

⁵ <http://www.thefreedictionary.com/configuration> (last accessed November 27, 2015).

⁶ *Id.*

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However, as the term is used in the Specification, *configuration of the entertainment device* can assume one of two possible meanings. On the one hand, it can refer to the state or condition of the entertainment device *after* it has been configured. In other words, after the entertainment device has been configured, it would exhibit a *configuration of the entertainment device*. However, the Specification admits of another possible meaning. The Specification teaches that a personal computer is used to generate command values and associated configuration choices after which the “resulting configuration data” is downloaded to the entertainment device. Ex. 1001, 8:19–9: 8. Thereafter, “the entertainment device *accesses and uses the configuration associated with the command value* corresponding to the activity key of the controlling device.” *Id.*, Abstract (emphasis added). The entertainment device can “access and use” such configuration, in part, because it has memory that stores executable instructions that are intended to control the operation of the entertainment device. *Id.* at 4:19–30.

Thus, before it is physically “configured,” the entertainment device stores executable instructions in memory to control the various electronic components within the entertainment device.

Once all user selections have been made, at step **512** the activity configuration parameters may be finalized and stored in AV receiver memory **402** *for future use in configuring the home entertainment system* when the indicated activity is called for, e.g., *the final configuration is stored* and associated with the received key command value corresponding to the activity key that was activated at the start of the configuration process. *Id.* at 6:36–43 (emphasis added). In other words, *after* the entertainment device is configured, it exhibits a *configuration of the entertainment device*. However, *before* it is configured, the entertainment device stores in memory

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executable instructions and data (“*the final configuration*”) that is associated with an activity key command. *Id.* at 6:41. It stores the configuration information “for future use.” *Id.* at 6:39. The entertainment device then later accesses and “uses” the configuration. *Id.*, Abstract. The memory in the entertainment device may store a plurality of sets of such executable instructions, each set of which also may be considered to be a *configuration of the entertainment device*. *Id.* at 5:43–48 (“various activities”).

As between the foregoing two possibilities, we think the latter construction is the correct one. The claims indicate that a *configuration of the entertainment device* is a construct that can be “downloaded” from a computer. *Id.*, claim 13. It is also a construct that can be “access[ed] and use[d]” in association with a controlling device activity key command value. *Id.* These attributes are more consistent with a set of executable instructions and data that is stored in memory than a physical state or configuration of the entertainment device after it has been configured. *Id.* at 6:38 (“finalized and stored”); 6:41 (“stored and associated”).

In view of the foregoing we construe *configuration of the entertainment device* in claims 13 and 14 as referring to information stored in memory in the entertainment device that can be accessed and used to configure the entertainment device.

IV. ANTICIPATION BY DUBIL

To anticipate a patent claim under 35 U.S.C. § 102, “a reference must describe . . . each and every claim limitation and enable one of skill in the art to practice an embodiment of the claimed invention without undue experimentation.” *Am. Calcar, Inc. v. Am. Honda Motor Corp.*, 651 F.3d

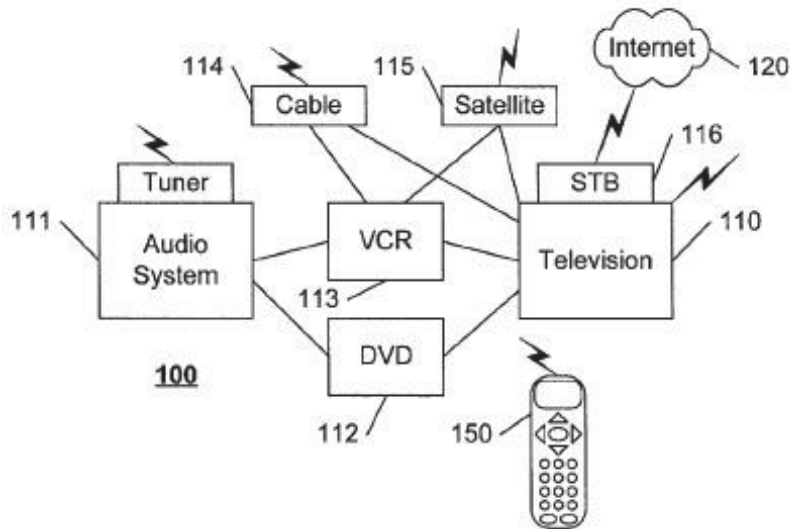
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1318, 1341 (Fed. Cir. 2011) (citing *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009)). Anticipation [of a patent claim] is a question of fact. *See In re Montgomery*, 677 F.3d 1375, 1379 (Fed. Cir. 2012).

Whether a patent is anticipated is a two-step inquiry. *Power Mosfet Tech., LLC. v. Siemens AG*, 378 F.3d 1396, 1407 (Fed. Cir. 2004). The first step requires construction of the claims. *See id.* The second step in the analysis requires a comparison of the properly construed claim to the prior art. *See id.* As the party challenging the patentability of claims 13–15, Petitioner bears the burden of proving anticipation by a preponderance of the evidence. *See* 35 U.S.C. § 316(e).

A. Dubil (Exhibit 1005)

Dubil discloses a remote control device that provides commands based on the configuration of components in an AV system. Ex. 1005, Abstract. One embodiment of Dubil is illustrated in Figure 1 below.



In Figure 1, system 100 includes television 110, audio system 111, DVD player 112, VCR 113, cable interface 114, satellite receiver 115, and set-top box 116. Ex. 1005 ¶ 17. Remote control device 150 provides for

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remote control of some or all of the components 110–116. In operation, the system 100 may receive audio-video information from satellite receiver 115 and provide the video to television 110 and the audio to audio amplifier 111. *Id.* At another point in time, system 100 may provide audio-video information from VCR 113, and provide both the video and the audio information to television 110. *Id.*

Dubil identifies the components of the system. *Id.* ¶ 18. An “activity set” associates select system functions to particular components to support a particular user activity. *Id.* Thus, although multiple components of a system may include an audio output signal, an activity set identifies which particular component in the system provides the audio output of the system. *Id.*

Figures 2A and 2B of Dubil are shown below.

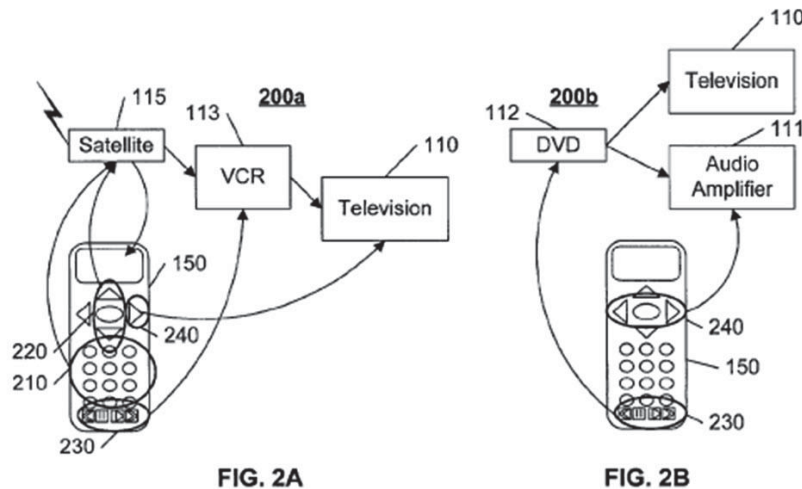


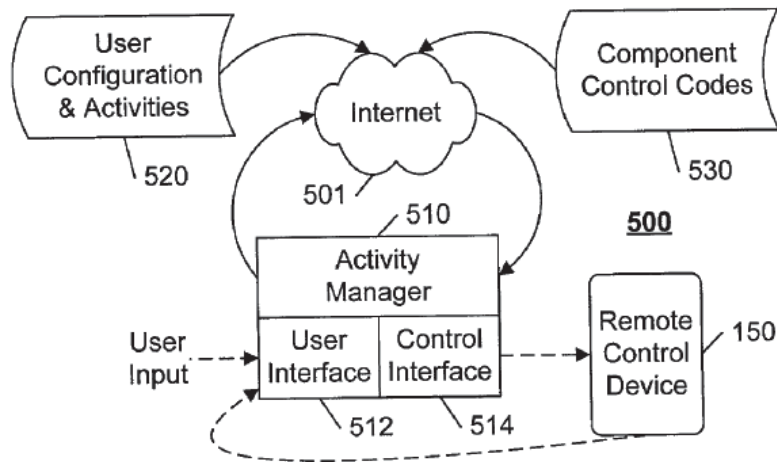
Figure 2A illustrates an activity set 200a for satellite broadcasts. *Id.* ¶ 19. Satellite receiver 115 provides AV information to VCR 113 which then provides AV information to the television 110. *Id.* Alternatively, the system may be configured as illustrated in Figure 2B to view a DVD movie. *Id.* ¶ 20. In this activity, DVD player 112 is the source of the AV

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information. *Id.* DVD player 112 provides the video information to television 110, and the audio information to audio amplifier 111.

Dubil discloses an activity manager 510 that has access to a database of user configurations and activity sets 520 and a database of control codes 530. *Id.* ¶ 30. The activity manager 510 is illustrated in Figure 5 of Dubil shown below.



As shown in Figure 5, Dubil's activity manager 510 receives user input, via a user interface 512, and provides control codes to a remote control device 150 via control interface 514. *Id.* ¶ 30. The database disclosed in paragraph 30 may be distributed among a variety of storage devices and storage systems. *Id.*

The user interface 512 includes two types of user input processing, namely: (1) creating an activity set; and (2) invoking an activity set. *Id.* ¶ 31. The user invokes an activity set by selecting keys on the remote control device 150 or by using a menu that is presented on a display device. *Id.* Based on such selection input, the activity manager 510 accesses the database of user activity sets 520 to determine which component functions are being mapped to which keys on the remote control device 150. *Id.* The activity set manager 510 accesses the component control code database 530

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to determine the code that the remote control device requires for the selected activity set. *Id.* If the activity set 520 includes a preset list or similar command construct, the activity set manager 510 processes the preset list and provides the appropriate commands to the remote control device 150 to effect the commands on the list.

In the system depicted in Figure 5, each device (510–530) is connected to the internet. *Id.* ¶ 37. A third party vendor may provide an internet-based application program for creating the user configuration and activity sets 520. *Id.* The command codes corresponding to each activity set may be downloaded to a storage device at the user location, such as a set-top box that is configured to provide the activity set codes to the remote control device 150 on demand. Alternatively, the remote control device 150 may be configured to store a plurality of sets of compiled command codes, corresponding to each of a plurality of user activity sets. *Id.*

B. Analysis of Claim 13

Petitioner alleges that Dubil anticipates claim 13. Pet. 25–29. Petitioner supports its allegations with declaration testimony from Mr. Geier. *Id.*, Ex. 1003 ¶¶ 43–48. Petitioner identifies Dubil’s VCR 113 as corresponding to the entertainment device of claim 13. Pet. 25. Among other things, Petitioner contends that a person of ordinary skill in the art would have understood that, in order to provide video and audio information to the television, VCR 113 must inherently access and use the configuration associated with the sent command value. *Id.* at 27–28. Petitioner further alleges that Dubil, at paragraph 34, discloses downloading a configuration from a personal computer. *Id.* at 28.

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Patent Owner first argues that Dubil does not anticipate claim 13, because it does not “associate a command value corresponding to an activity key of a controlling device with a configuration of the entertainment device.” PO Resp. 12–13. Patent Owner argues that Dubil does not disclose this element explicitly and that Patent Owner has failed to make out a proper case that this limitation is met inherently. *Id.* Patent Owner’s argument is in two parts. First, Patent Owner argues that Dubil does not associate a command value with an activity key. PO Resp. 15. This argument is not persuasive. Dubil states that: “[e]ach user activity has a corresponding mapping of keys on the remote control device to facilitate the user activity.” Ex. 1005 ¶ 9. A person of ordinary skill in the art would have understood that pressing an activity key on Dubil’s remote control would result in the transmission of a signal that contains a command value associated with the activity key that was pressed.

The second part of Patent Owner’s first argument is that pressing a Dubil activity key does not associate a command value with a “configuration of the entertainment device” as claimed. PO Resp. 15. Patent Owner argues that pressing a Dubil activity key merely transmits a set of commands to various home entertainment system components. *Id.* Patent Owner argues that this occurs without associating an activity key command value with a configuration of the entertainment device. *Id.* at 16.

In reply, Petitioner argues that Patent Owner’s position is premised on an incorrect claim construction. Reply 9. Petitioner further argues that Dubil illustrates exemplary activity sets in which the source and destination devices are indicated for a desired activity. *Id.* Petitioner points out that the “Watch TV” activity may either use the cable interface or satellite receiver

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as the input device and either the television or surround sound as the audio output device. *Id.* Petitioner observes Dubil's VCR 113 is the only component that is connected to all of these input and output devices. *Id.* Petitioner deduces, from this disclosure, that Dubil's VCR 113 actively selects between input devices and actively selects between output devices. *Id.* Petitioner is supported in its deduction by declaration testimony from Mr. Geier. Ex. 1055 ¶ 25.

We are not persuaded by Petitioner's argument or evidence. Petitioner's conclusion does not follow logically and necessarily from Petitioner's underlying premises. The system configuration described by Petitioner just as easily could be accomplished by sending on/off commands to the various input and output components so that the desired input device is powered on and the non-desired input device is powered off. The same can be said of the output devices. Thus, the entertainment system, as a whole, can be configured by sending power on/off commands to various devices and then passively routing the input and output signals through the VCR. Petitioner cites to no explicit disclosure in Dubil where the VCR actively switches between a plurality of inputs and a plurality outputs. We have reviewed Dubil and find no such explicit disclosure. Neither do we find that Dubil discloses active switching of the VCR inherently. While it may be possible that the VCR could switch between sources and destinations, we are not persuaded that such functionality is necessarily present in Dubil for it to operate. Inherency may not be established by probabilities or possibilities. *See Agilent Tech., Inc. v. Affymetrix, Inc.*, 567 F.3d 1366, 1383 (Fed. Cir. 2009). The mere fact that a certain thing may result from a given set of circumstances is not sufficient. *Id.*

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Furthermore, Dubil cannot associate a remote control activity key command value with a *configuration of the entertainment device* unless Dubil first possesses a *configuration of the entertainment device* within the meaning of claim 13. We are not persuaded that Dubil discloses a “*configuration of the entertainment device*” as we have construed the term. Petitioner’s evidence and argument focuses on Dubil’s entertainment system as a whole. However, “*configuration of the entertainment device*,” as it is used in claim 13, refers to a set of executable instructions and data stored in memory in the entertainment device that is first downloaded from a personal computer and is then accessed and used after the entertainment device receives a signal from the remote control that contains a command value that is associated with such configuration. Petitioner provides no persuasive evidence that Dubil’s VCR has memory that stores executable instructions and data in the form of a “*configuration of the entertainment device*” that is downloaded from a computer and is accessed and used as claimed.

Patent Owner next argues that Dubil fails to satisfy the “access and use” limitation in claim 13. Petitioner argues against this position by attempting to point out that Dubil’s VCR 113 selects input and output devices for the activity prompted by activation of an activity key. Reply 12. Petitioner concludes that, since activation of an activity key invokes an activity set, and the activity set is stored and retrieved, the limitation is met. Reply 12, Ex. 1055 ¶ 26. This argument is not persuasive.

Dubil’s remote control has one or more activity keys. Ex. 1005 ¶ 9. When the user identifies a preferred activity, the remote control communicates commands to each system component corresponding to the activity. *Id.* The remote control also is configured so that different control

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functions for various devices are mapped to keys on the remote control. *Id.* ¶ 21. For example, if the user desires to watch a satellite TV broadcast, the user presses the “watch/record satellite broadcast” activity key on the remote control. *Id.* The remote control is then configured to associate the channel up and down keys with the satellite receiver, the scanning keys (e.g., fast-forward) with the VCR, and the volume controls to the television. *Id.* Configuring a remote control by mapping keys on the remote control to components of a home entertainment system is not the same as storing a *configuration of the entertainment device* in the entertainment device and then accessing and using the configuration by transmitting a command value from the remote control.

Dubil also discloses that a collection of data may be distributed among a variety of storage devices. *Id.* ¶ 30. Such storage devices may be a TIVO or a set-top box. *Id.* ¶¶ 19, 37. However, Dubil merely discloses that command codes corresponding to activity sets are stored on or downloaded to a device that is configured to “provide the compiled code to the remote control device **150** on demand.” *Id.* ¶ 37.⁷ Dubil does not disclose storing activity set information in the VCR (Dubil’s “entertainment device”). Moreover, Dubil does not disclose storing, in the entertainment device (VCR 113), a *configuration of the entertainment device* comprised of a set of executable instructions stored in memory in the entertainment device and that is accessed and used to configure the internal components of the entertainment device in response to receipt of a signal with a command value corresponding to such configuration. In summary, at most, Dubil

⁷ Alternatively, the activity set information may be stored directly on the remote control device 150. *Id.*

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discloses storing activity set information on a device that is configured to provide activity set information (compiled code) *to the remote control device*. It does not disclose storing, in the entertainment device, executable instructions to configure the internal components of the entertainment device and then accessing and using such executable instructions as required by claim 13.

Patent Owner also argues that Dubil fails to disclose the limitation in claim 13 directed to downloading the configuration of the entertainment device into the entertainment device from a computing device. PO Resp. 18. Petitioner argues that Dubil discloses the use of a personal computer to collect information regarding the configuration of the user's equipment and creates one or more data sets that can be downloaded to the equipment. Reply 12–13. Petitioner argues that the term “user's equipment” in Dubil does not exclude VCR 113. *Id.* at 13. Petitioner further argues that VCRs are programmable and may be used to store instruction information. *Id.* Petitioner further argues that Dubil does not require that configuration information be stored in any particular component. *Id.* Based on the foregoing, Petitioner concludes that Dubil teaches downloading the configuration to the VCR. *Id.* We disagree.

Dubil discloses that a user may use a personal computer to interface with a configuration application program. Ex. 1005 ¶ 34. The application program collects information from the user regarding the configuration of the user's equipment and then creates one or more data sets that can be downloaded “to the equipment” to effect the configuration. *Id.* The activity manager 510 compiles the activity set into the appropriate set of command codes and stores the corresponding set of command codes with each activity

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set, so that the codes are immediately available when the user invokes an activity set. *Id.* ¶ 36. The activity set command codes may be stored on an internet site or downloaded to a storage device at the user's location, such as a set-top box. *Id.* ¶ 37. Such storage device is configured to provide the activity set codes to the remote control device. *Id.* We are not persuaded that the foregoing satisfies the "download" limitation of claim 13.

There is no explicit disclosure in Dubil that VCR 113 functions as the "storage device at the user location" as identified in paragraph 37 of Dubil. The mere possibility that it might function as a storage device is insufficient to establish anticipation either explicitly or inherently. *See Agilent Tech.*, 567 F.3d at 1383. Furthermore, the information that is downloaded and stored in Dubil relates to compiled command codes for activity sets, not a *configuration of the entertainment device* as required by claim 13. The information that is downloaded and stored in Dubil's storage device is provided to the remote control device on demand. Ex. 1005 ¶ 37. This is different from the limitation in claim 13 where a *configuration of the entertainment device* is downloaded into the entertainment device from a computing device where it can be accessed and used by the entertainment device to configure its internal components in response to receipt of a signal from the remote control containing an associated command value. Ex. 1001, claim 13.

"Anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim." *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983). Inasmuch as Dubil fails to disclose all elements of claim 13, we find that Petitioner has

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failed to establish, by a preponderance of the evidence, that Dubil anticipates claim 13.

C. Analysis of Claim 14

Claim 14 is an independent claim that is substantially similar in scope to claim 13, except that it lacks a limitation directed to downloading a configuration of the entertainment device into the entertainment device from a computing device. Ex. 1001, claims 13, 14. Petitioner alleges that Dubil anticipates claim 14. Pet. 29–34. Petitioner supports its allegations with declaration testimony from Mr. Geier. *Id.*, Ex. 1003 ¶¶ 49–52.

Like claim 13, claim 14 also contains a limitation directed to a *configuration of the entertainment device* and, more particularly, associating an activity key command value with a configuration of the entertainment device. *Id.* claim 14. In disputing whether this limitation of claim 14 is met, the parties rely on the same arguments and evidence that we have considered previously with respect to claim 13. PO Resp. 20; Reply 13–14. We resolve this dispute in Patent Owner’s favor for essentially the same reasons discussed above with respect to claim 13.

Claim 14 also contains a limitation directed to causing the entertainment device to “access and use” the configuration associated with a command value. Ex. 1001, claim 14. We find that Dubil fails to disclose this limitation for essentially the same reasons discussed above with respect to claim 13.

We have considered Petitioner’s other arguments with respect to the anticipation of claim 14, but we need not resolve those issues in view of our determination that at least the two limitations discussed above are not

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satisfied by Dubil. We find that Petitioner has failed to establish, by a preponderance of the evidence, that Dubil anticipates claim 14.

D. Analysis of Claim 15

Claim 15 depends from claim 14 and adds a limitation directed to causing the entertainment device a graphical user interface for allowing a user to select a device to be used in the configuration for the entertainment device. Ex. 1001, claim 15. Because claim 14 is not anticipated, claim 15 is not anticipated. *See Trintec Industries, Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1296 (Fed.Cir. 2002).

IV. ORDER

In view of the foregoing, it is ORDERED that claims 13–15 of U.S. Patent 8,243,207 B2 have not been shown to be unpatentable as anticipated by Dubil.

This is a final decision. Parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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(54) **SYSTEM AND METHOD FOR ACTIVITY
BASED CONFIGURATION OF AN
ENTERTAINMENT SYSTEM**

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H04N 7/01 (2006.01)
(52) **U.S. Cl.** **348/734**
(58) **Field of Classification Search** 348/734,
348/552, 553, 554, 705, 706, 563–565, 569
See application file for complete search history.

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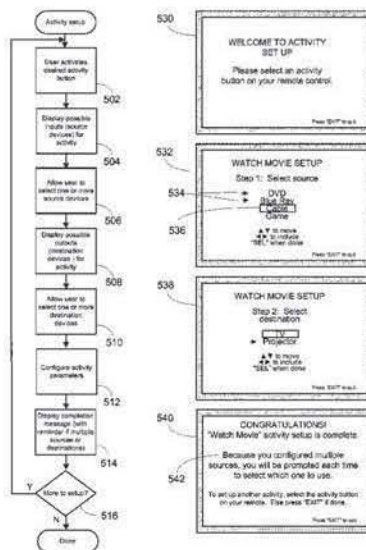
Primary Examiner — Paulos Natnael

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(57) **ABSTRACT**

A command value corresponding to an activity key of a controlling device is associated with a configuration of an entertainment device in which at least one of a plurality of devices is selected as an audio visual input source device for the entertainment device and at least one of the plurality of devices is selected as an audio visual output destination device for the entertainment device. When the entertainment device receives from the controlling device a signal which includes the command value corresponding to the activity key of the controlling device, the entertainment device accesses and uses the configuration associated with the command value corresponding to the activity key of the controlling device.

16 Claims, 7 Drawing Sheets



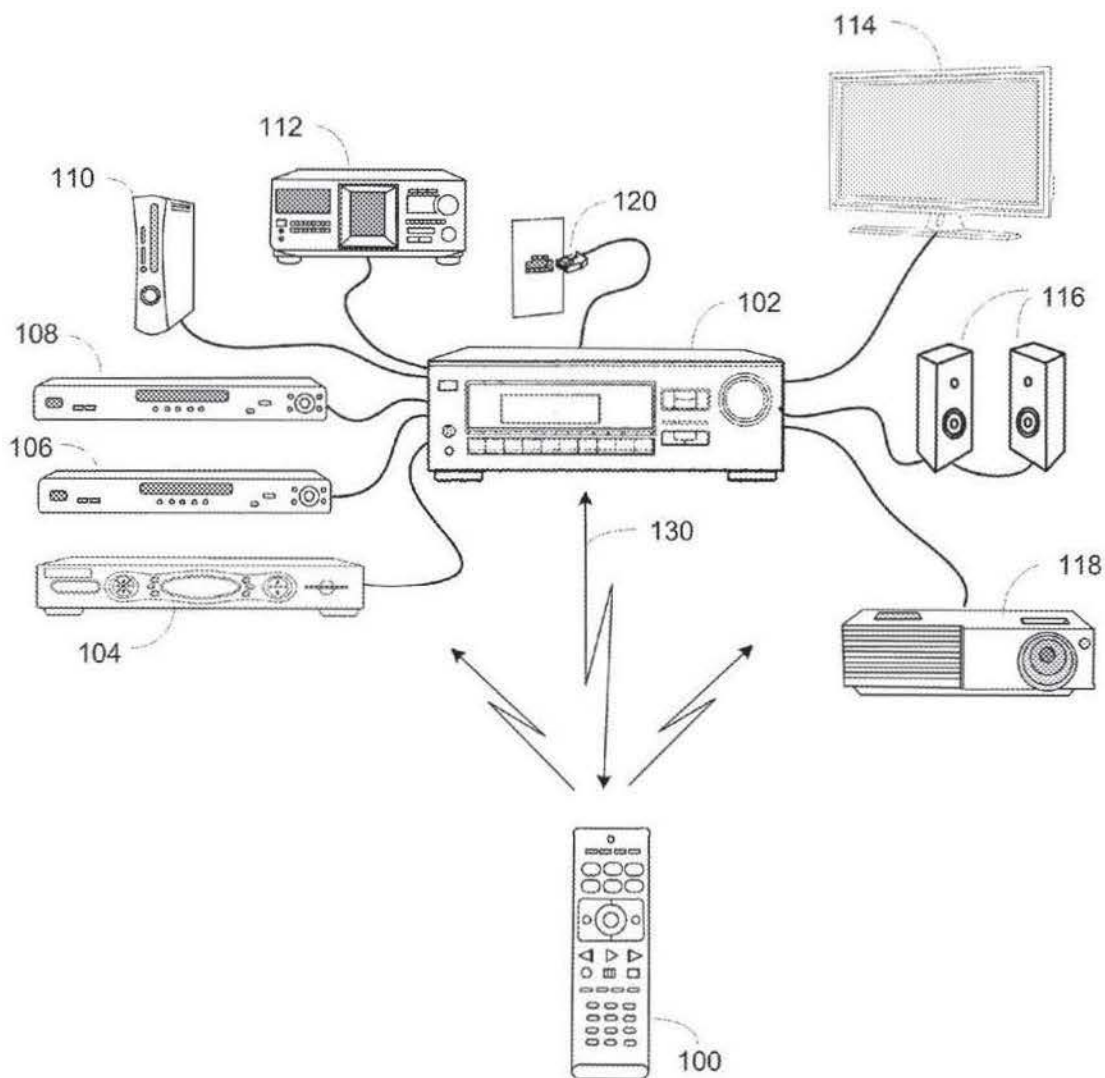


Figure 1

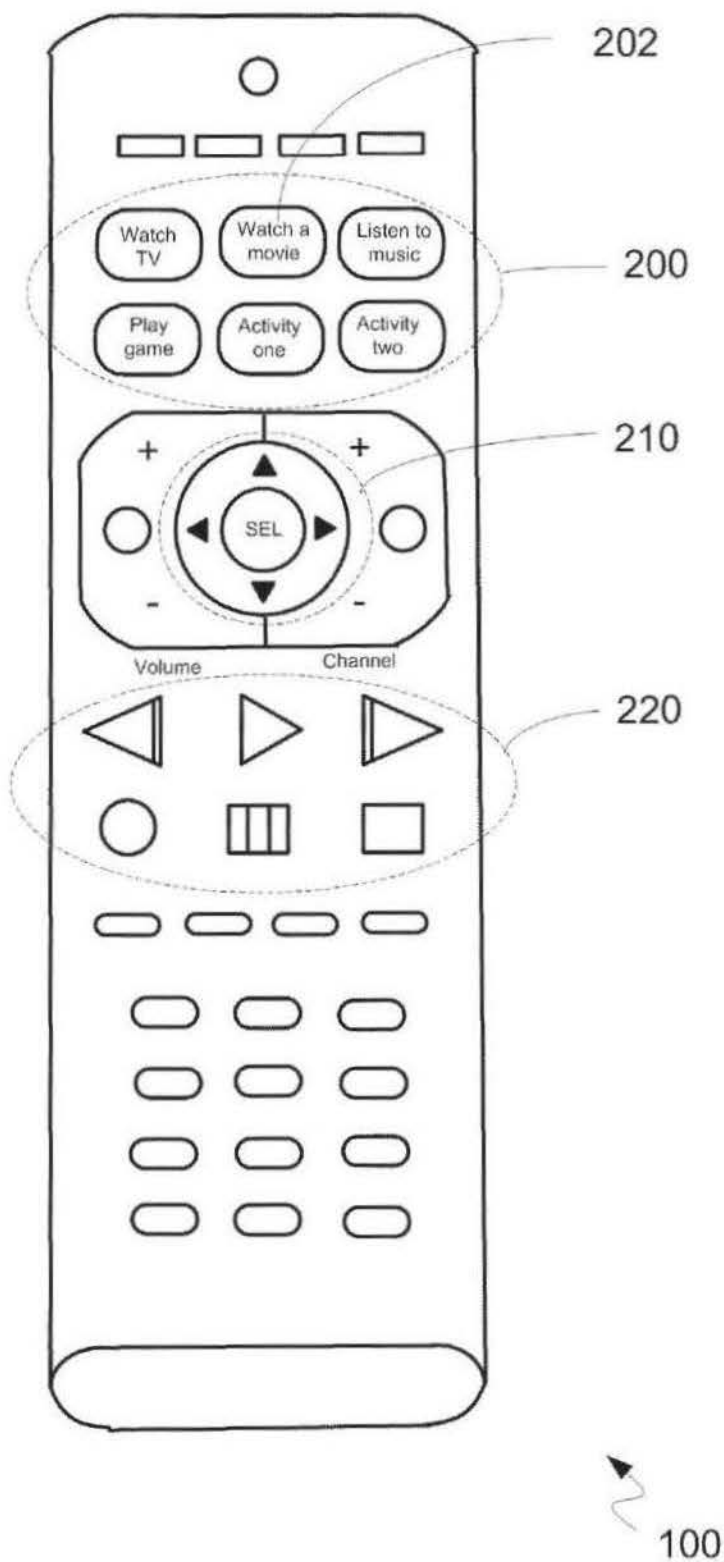


Figure 2

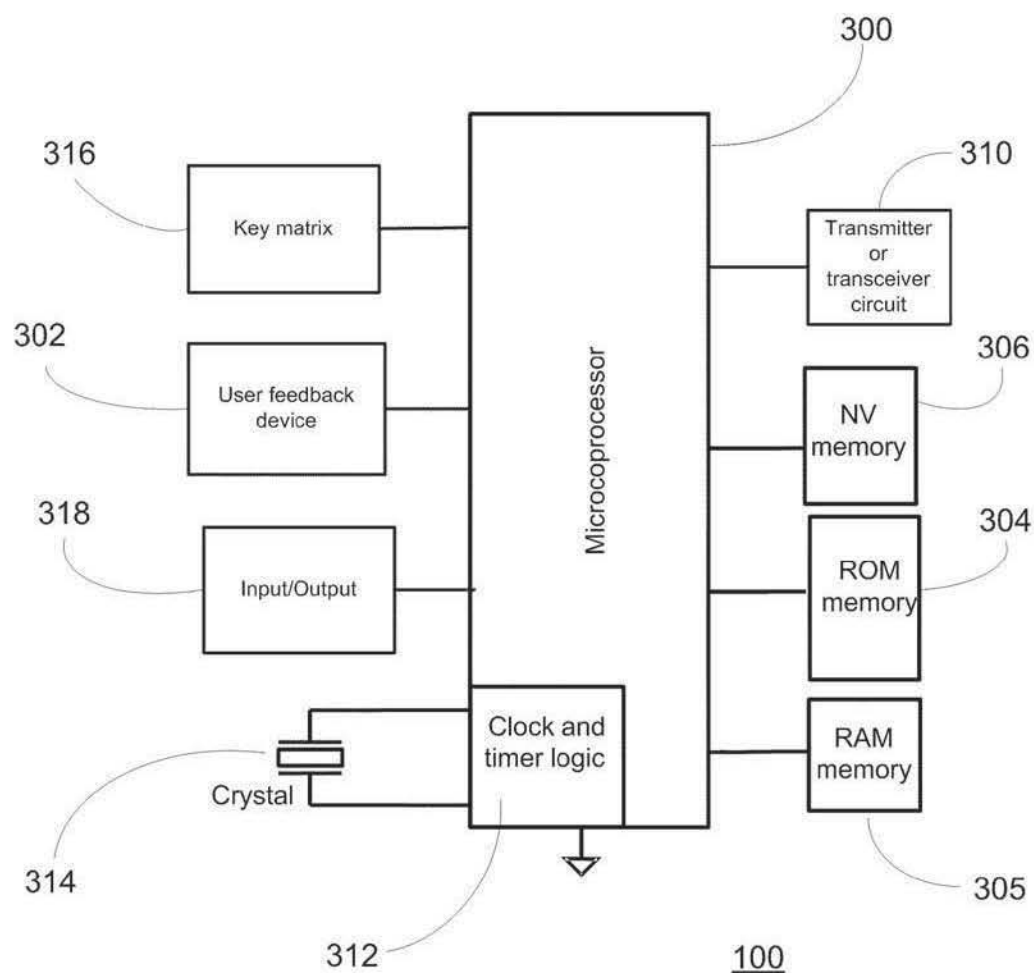


Figure 3

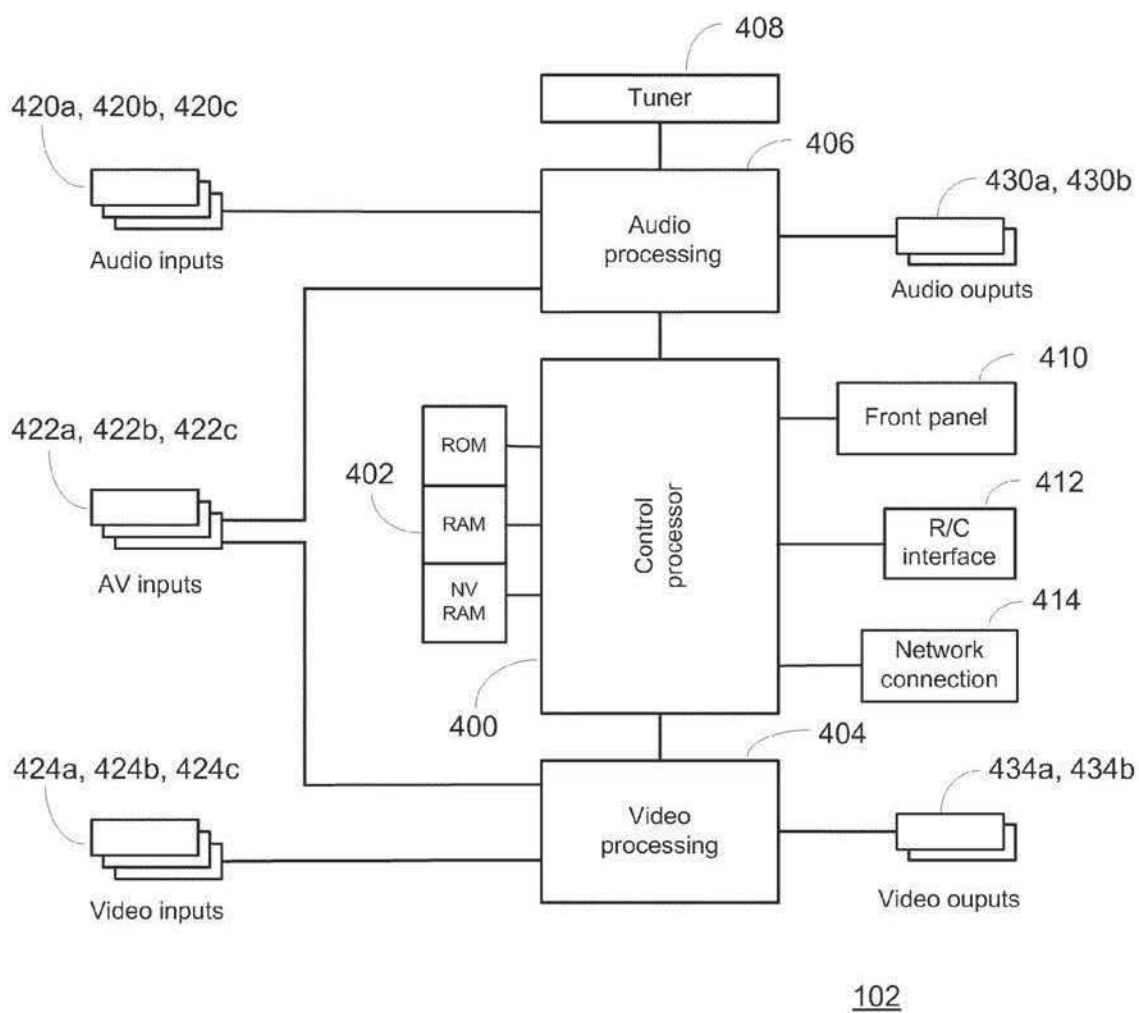


Figure 4

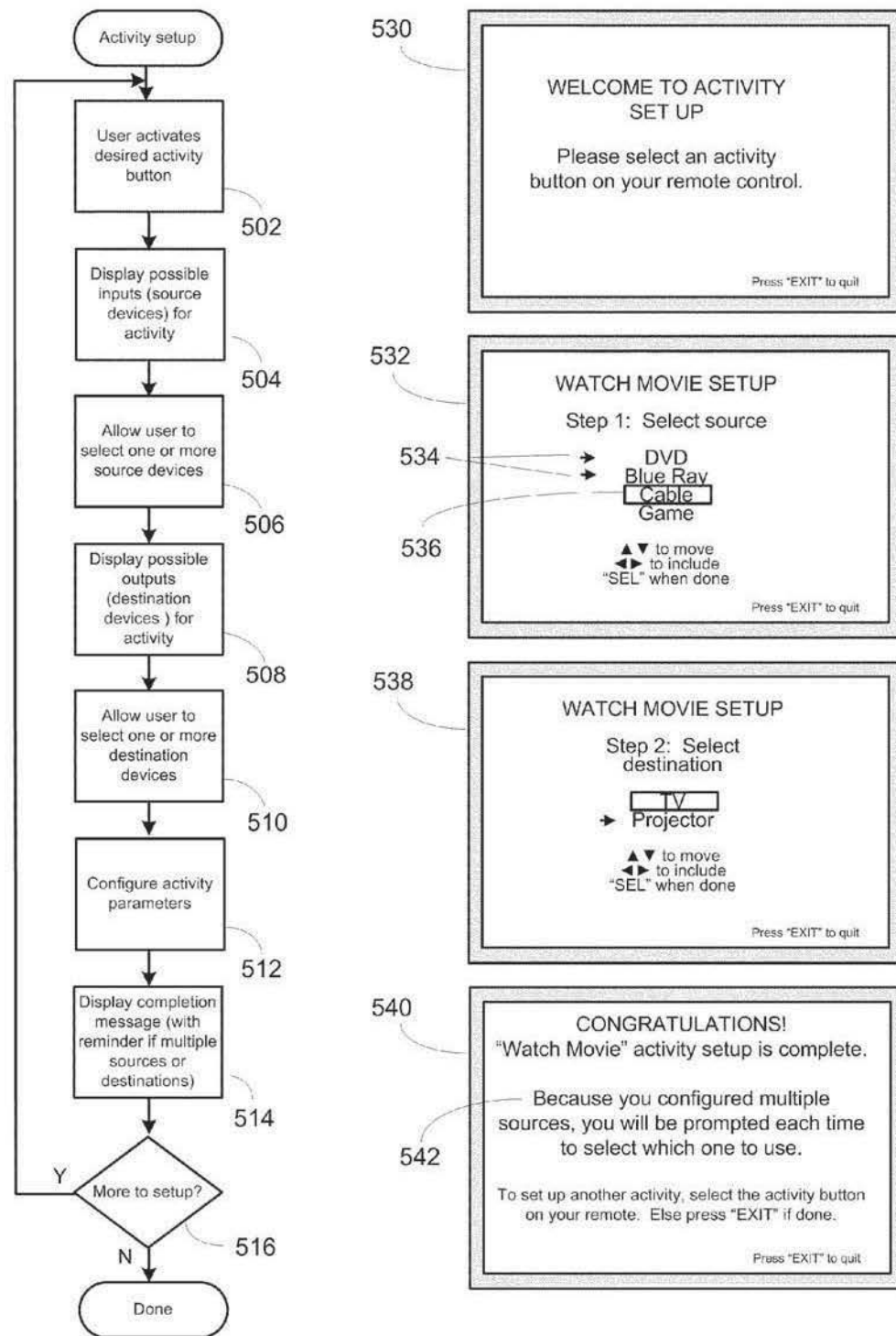


Figure 5

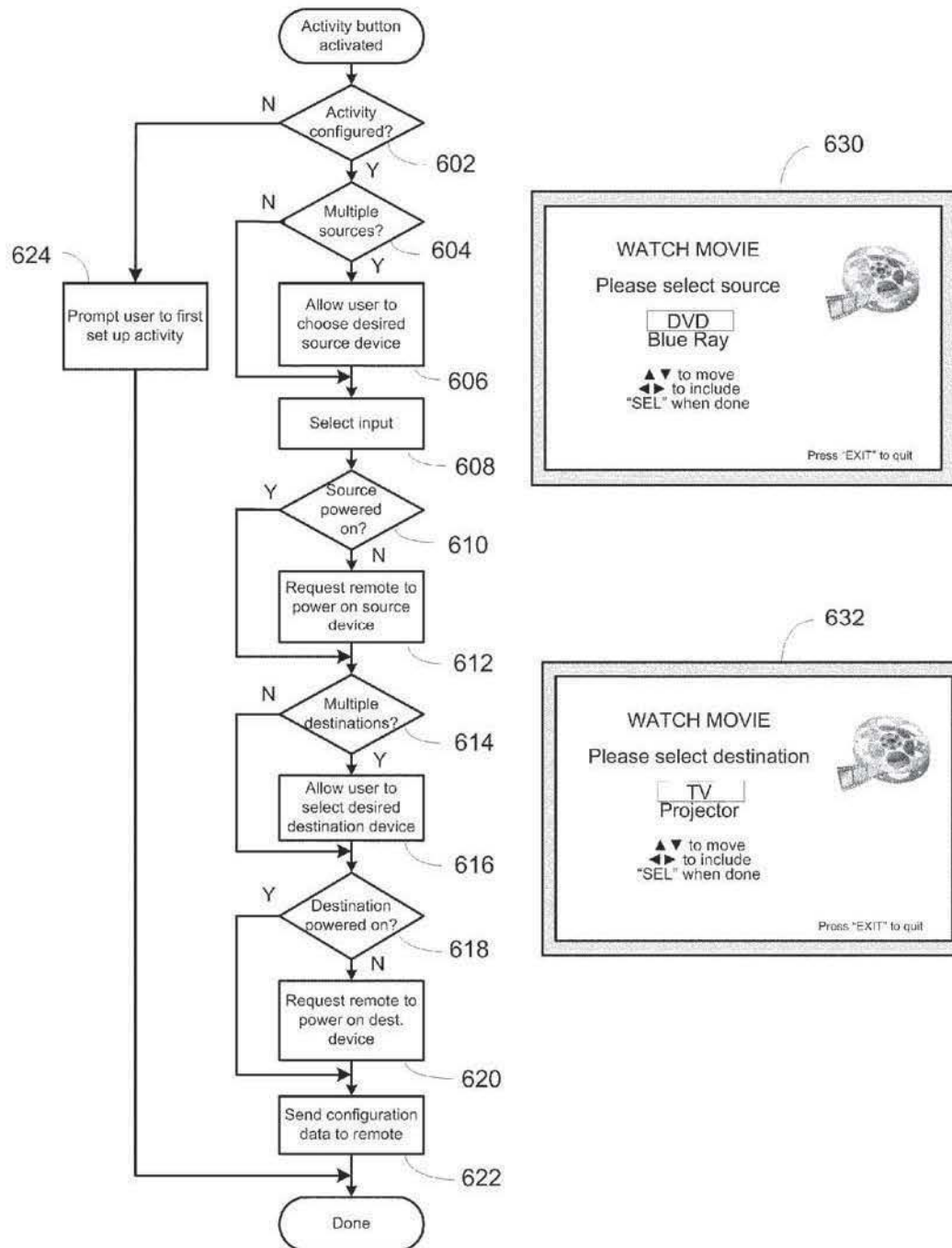


Figure 6

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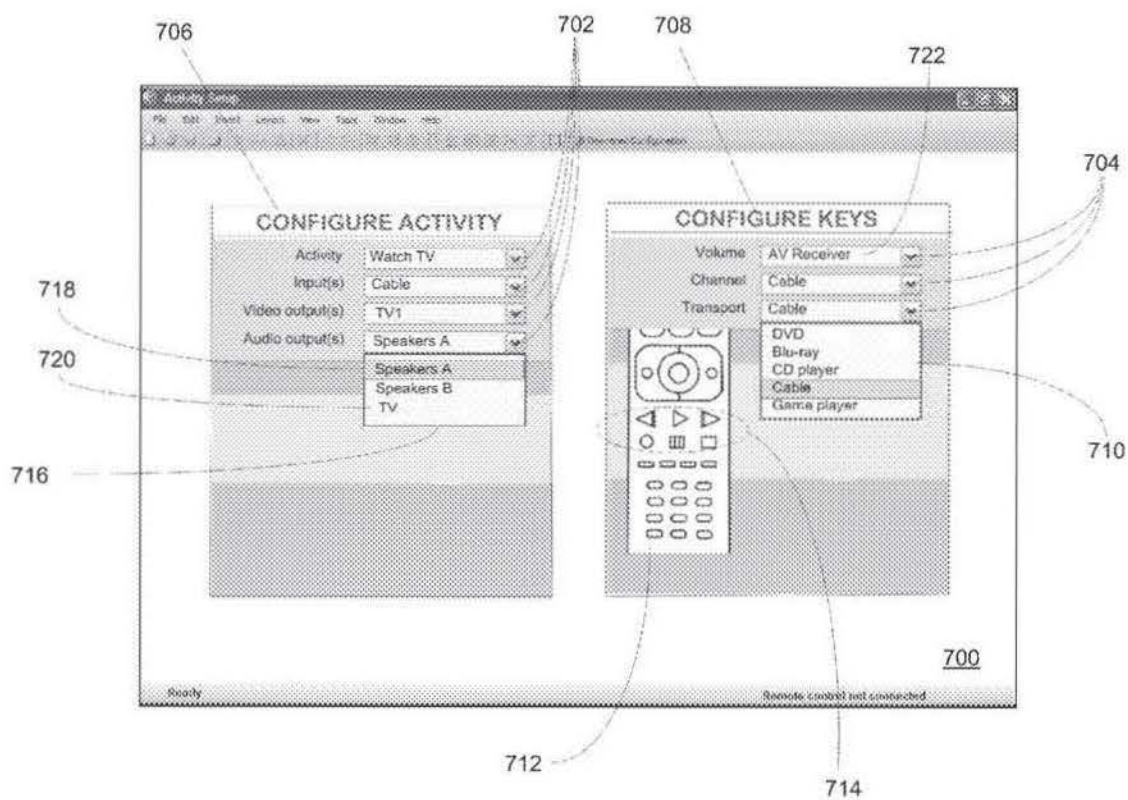


Figure 7

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SYSTEM AND METHOD FOR ACTIVITY BASED CONFIGURATION OF AN ENTERTAINMENT SYSTEM

BACKGROUND

Home entertainment systems in which multiple media sources and multiple media rendering devices are coupled through a central routing device such as an AV receiver are well known in the art, as are universal controlling devices adaptable to issue commands to a multiplicity of appliances of different manufacture and/or type and which are frequently associated with such home entertainment systems. As these home entertainment systems become increasingly complex due to the proliferation of media formats, appliance types, etc., the user actions required to configure a home entertainment system to match a desired activity such as watching TV or listening to music have become increasing onerous and error prone. Various methods have been proposed for automating all or part of these configuration operations, for example through use of controlling device based macro sequences such as described in U.S. Pat. No. 5,959,751 or state-based control such as described in U.S. Pat. No. 7,784,805. However, such methods may themselves be subject to error when equipment configurations or connections are not as expected, leading only to further user frustration.

SUMMARY OF THE INVENTION

This invention relates generally to improved methods for configuring a multi-input and/or multi-output home entertainment system to match a user's desired activities. In such systems, the outputs and inputs of the various components are generally routed to and switched through one central device such as an AV receiver. The inventive methods described herein comprise a cooperative effort between the AV receiver and an associated universal controlling device such as a remote control in which activation of an activity key or button on the controlling device results in transmission of a signal to the AV receiver to initiate certain previously defined configuration actions, which actions may be conditioned upon the AV receiver's determination of the current status of connected devices. In addition, certain controlling device command transmissions to other appliances in the home entertainment system may also be initiated as a result of said activity key activation, either unilaterally by the controlling device or at the request of the AV receiver. Since the AV receiver has access to appliance status information not available to the controlling device (by virtue of the AV receiver's physical connection to those appliances), and the controlling device in turn has access to appliance command functions not available to the AV receiver, the cooperative execution of an activity configuration request in this manner may result in more reliable and user-friendly system operation. In addition, since prior art initial user set up of AV receivers is generally GUI based and includes assignment of user-friendly names to source and destination appliances (for example, "DVD" in place of "Video input 3"), a user's initial specification of desired activity configurations may be facilitated by the use of these features when configuring activities.

A better understanding of the objects, advantages, features, properties and relationships of the invention will be obtained from the following detailed description and accompanying drawings which set forth illustrative embodiments and which

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are indicative of the various ways in which the principles of the invention may be employed.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the various aspects of the invention, reference may be had to preferred embodiments shown in the attached drawings in which:

FIG. 1 illustrates an exemplary system in which the methods of the instant invention may be practiced;

FIG. 2 further illustrates an exemplary controlling device of the system of FIG. 1;

FIG. 3 illustrates a block diagram of exemplary components of the exemplary controlling device of FIG. 2;

FIG. 4 illustrates a block diagram of exemplary components of an AV receiver of the system of FIG. 1;

FIG. 5 illustrates an exemplary activity configuration setup process in accordance with the methods of this invention;

FIG. 6 illustrates an exemplary activity switching process in accordance with the methods of this invention; and

FIG. 7 illustrates a second exemplary activity configuration setup process in accordance with the methods of this invention.

DETAILED DESCRIPTION

Turning now to FIG. 1, there is illustrated an exemplary home entertainment system in which the audio/video outputs of a group of various media source appliances such as for example a set top box ("STB") 104, a first DVD player 106, a second DVD player 108, a game console 110, and a CD changer 112 are all connected as inputs to an AV receiver 102. AV receiver 102 in turn functions to switch the currently desired input media stream to one or more designated outputs of AV receiver 102 which are, in turn, connected to various audio and/or video rendering devices such as TV 114, projector 118, and/or loudspeakers 116; all as is well known in the art. In some embodiments AV receiver 102 may also include a network interface 120, for example Ethernet, for the routing of streaming media input/output from or to other areas of the home. When included, such a network interface may also be available for Internet access, download of firmware updates and/or other data into AV receiver 102, etc., again as well known in the art. Also illustrated is a universal controlling device 100 which is capable of transmitting commands to the appliances, using any convenient IR, RF, Point-to-Point, or networked protocol, to cause the appliances to perform operational functions. While illustrated in the context of a home entertainment system, it is to be understood that appliances controllable by universal controlling device 100 may include, but need not be limited to, televisions, VCRs, DVRs, DVD players, cable or satellite converter set-top boxes ("STBs"), amplifiers, AV receivers, CD players, game consoles, home lighting, drapery, fans, HVAC systems, thermostats, personal computers, etc. In a preferred embodiment, controlling device 100 supports bidirectional communication 130 with AV receiver 102 via any convenient IR or RF protocol.

In an exemplary embodiment, controlling device 100 may be further adapted to function in cooperation with AV receiver 102 to configure the illustrative entertainment system in accordance with a user's desired activities. To this end, as illustrated in FIG. 2, an exemplary controlling device may be provisioned with a series of activity selection keys or buttons 200 with designations such as, for example, "Watch TV", "Watch a Movie", "Listen to Music", "Play a Game", etc. Activation of such an activity selection key may cause AV

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receiver 102 and/or controlling device 100 to cooperatively place the exemplary home entertainment system into a user-specified state which has been associated with that activity, as will be described in further detail hereafter.

Turning now to FIG. 3, for use in commanding the functional operations of one or more appliances, the controlling device 100 may include, as needed for a particular application, a processor 300 coupled to a ROM memory 304, a RAM memory 305, a key matrix 316 (e.g., hard keys, soft keys such as a touch sensitive surface overlaid on a liquid crystal (LCD), and/or an electroluminescent (EL) display), transmission circuit(s) and/or transceiver circuit(s) 310 (e.g., IR and/or RF), a non-volatile read/write memory 306, a means 302 to provide feedback to the user (e.g., one or more LEDs, display, speaker, and/or the like), an input/output port 318 such as a serial interface, USB port, modem, Zigbee, WiFi, or Bluetooth transceiver, etc., and clock and timer logic 312 with associated crystal or resonator 314.

As will be understood by those skilled in the art, some or all of the memories 304, 305, 306 may include executable instructions (collectively, the controlling device program memory) that are intended to be executed by the processor 300 to control the operation of the remote control 100, as well as data which serves to define to the operational software the necessary control protocols and command values for use in transmitting command signals to controllable appliances (collectively, the command data). In this manner, the processor 300 may be programmed to control the various electronic components within the remote control 100, e.g., to monitor the key matrix 316, to cause the transmission of signals, etc. The non-volatile read/write memory 306, for example an EEPROM, battery-backed up RAM, FLASH, Smart Card, memory stick, or the like, may additionally be provided to store setup data and parameters as necessary. While the memory 304 is illustrated and described as a ROM memory, memory 304 can also be comprised of any type of readable media, such as ROM, FLASH, EEPROM, or the like. Preferably, the memories 304 and 305 are non-volatile or battery-backed such that data is not required to be reloaded after battery changes. In addition, the memories 304, 305 and 306 may take the form of a chip, a hard disk, a magnetic disk, an optical disk, and/or the like. Still further, it will be appreciated that some or all of the illustrated memory devices may be physically combined (for example, a single FLASH memory may be logically partitioned into different portions to support the functionality of memories 304 and 306 respectively), and/or may be physically incorporated within the same IC chip as the microprocessor 300 (a so called "microcontroller") and, as such, they are shown separately in FIG. 3 only for the sake of clarity.

To cause the controlling device 100 to perform an action, the controlling device 100 is adapted to be responsive to events, such as a sensed user interaction with the key matrix 316, etc. In response to an event, appropriate instructions within the program memory (hereafter the "controlling device operating program") may be executed. For example, when a function key is actuated on the controlling device 100, the controlling device 100 may retrieve from the command data stored in memory 304, 305, 306 a command value and control protocol corresponding to the actuated function key and, where necessary, current device mode and transmit that command to an intended target appliance, e.g., STB 104, in a format recognizable by that appliance to thereby control one or more functional operations of that appliance. It will be appreciated that the operating program can be used not only to cause the transmission of commands and/or data to the appliances, but also to perform local operations. While not limit-

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ing, local operations that may be performed by the controlling device 100 may include displaying information/data, favorite channel setup, macro key setup, function key relocation, etc. Examples of local operations can be found in U.S. Pat. Nos. 5,481,256, 5,959,751, and 6,014,092.

For selecting sets of command data to be associated with the appliances to be controlled data may be provided to controlling device 100 that serves to identify each intended target appliance by its make, and/or model, and/or type. Such data allows the controlling device 100 to identify the appropriate command data set within a library of command data that is to be used to transmit recognizable commands in formats appropriate for such identified appliances. Such a library of command data may be preprogrammed in controlling device 100, downloaded into controlling device 100 as part of the setup process, or a combination thereof. The library of command data may represent a plurality of controllable appliances of different types and manufacture, a plurality of controllable appliances of the same type but different manufacture, a plurality of appliances of the same manufacture but different type or model, etc., or any combination thereof as appropriate for a given embodiment. In certain embodiments, such data used to identify an appropriate command data set may take the form of a numeric setup code (obtained, for example, from a printed list of manufacturer names and/or models with corresponding code numbers, from a support Web site, etc.) which may be entered via activation of those keys that are also used to cause the transmission of commands to an appliance, preferably the keys that are labeled with numerals.

Alternative device setup procedures known in the art include scanning bar codes, RFID tags, or other indicia; sequentially transmitting a predetermined command in different formats until a target appliance response is detected; interaction with a Web site culminating in downloading of command data and/or setup codes to the controlling device, etc. Further, in embodiments such as that illustrated in FIG. 1, set up of a controlling device 100 may be performed interactively in conjunction with AV receiver 102, using a connected device such as TV 114 for GUI display and a database of codes and/or brand and model information stored locally on AV receiver 102 or located remotely on a PC or Web server and accessed via network connection 120. Since such methods for setting up a controlling device to command the operation of specific home appliances are well-known, these will not be described in greater detail herein. Nevertheless, for additional information pertaining to setup procedures, the reader may turn, for example, to U.S. Pat. Nos. 4,959,810, 5,614,906, or 6,225,938 or to pending U.S. patent application Ser. No. 11/515,962, all of like assignee and all incorporated herein by reference in their entirety.

With reference to FIG. 4, an exemplary AV receiver 102 may include, as needed for a particular application, a control processor 400 coupled to a memory 402 which may comprise any combination of ROM, RAM, and/or non-volatile read write memory; video and audio processing sections 404, 406; a tuner 408 for reception of radio broadcast channels; a front panel 410 including user controls and/or a display; a remote control interface 412 for communicating with a controlling device (e.g. 100); a network interface 414 for communication with a local and/or wide area network; audio inputs 420a through 420c; video inputs 424a through 424c; AV inputs 422a through 422c; audio outputs 430a, 430b; and video outputs 434a and 434b. As will be appreciated, audio and video inputs and outputs (which may be more or less in number than illustrated) may comprise analog or digital signals and exemplary AV receiver 102 may be provisioned with analog-to-digital (ADC) converters, digital-to-analog (DAC)

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converters, video decoders, HDMI encoder/decoders, CODECs, format converters, etc., all as necessary to implement the input/output switching and routing functionality. It will be further appreciated that the functionality of video and audio processing blocks 404 and 408 may be implemented in separate components such as a specialized digital signal processors (DSP), may be implemented as part of control processor 400, or any combination thereof, and that portions of memory 402 may be allocated to or associated with audio and video processing blocks 404, 408.

It will also be appreciated that some or all of the memory elements 402 may take the form of a chip, a hard disk, a magnetic disk, an optical disk, FLASH memory, and/or the like, and that all or portion of the memory 402 may be physically incorporated within the same IC chip as the control processor 400 and/or audio or video processing blocks 404, 406 and, as such, memory 402 is shown separately in FIG. 4 only for the sake of clarity.

As will be understood by those skilled in the art, some or all of the memory 402 may include executable instructions that are intended to be executed by the processor 400 to control the operation of the AV receiver 102 (hereafter, the "AV receiver operating program"). In this manner, the processor 400 may be programmed to control the various electronic components within the AV receiver, e.g., to monitor the front panel 410 and or remote control interface 412, to cause the routing of video and/or audio signals between the various inputs and outputs, to control selection of radio broadcast channel by tuner 408, to control volume and equalization settings of audio outputs 430a and 430b, etc. Further, the AV receiver operating program, in conjunction with video processing block 404, may provide GUI-based setup menus for AV receiver functions such as input and output assignments, levels, balances, equalization, etc., via a connected video monitor device such as for example TV 114. Since such GUI-based AV receiver setup is well known in the art, for the sake of brevity it will not be described further herein, however if greater detail is desired regarding such features and functionality the interested reader may reference, for example, a document such as the Denon AV Surround Receiver STR-DA5500ES Owner's Manual (D&M Holdings Inc. publication number 5411 10255 000D).

In addition, in an exemplary embodiment described herein the AV receiver operating program may include programming which functions in cooperation with controlling device 100 to define and subsequently execute user-desired configuration of the home entertainment system in accordance with various activities.

With reference to FIG. 5, after completing the initial set up of AV receiver 102, for example as described in the above referenced Denon STR-DA5500ES User's Manual, a user may wish to configure the functionality of the activity buttons 200 of controlling device 100. To this end, she may place the AV receiver into an activity setup mode via, for example by a sequence of keypresses on controlling device 100, use of navigation keys 210 of controlling device 100 to select a menu item displayed on TV 114, or such other action as may be appropriate for a particular embodiment. Upon entering activity setup mode, the AV receiver operating program may display an exemplary initial status message 530 on TV 114 prompting the user to select an activity to configure. The AV receiver operating program thereafter waits at step 502 for user input, i.e. activation of one of the activity buttons 200 of controlling device 100. In the illustrated example, the user may select button 202 labeled "Watch a Movie", resulting in communication by the controlling device 100 of an appropriate key command value to AV receiver 102. Upon receipt of

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the "Watch a Movie" activity command, at step 504 the AV receiver operating program may display a listing 532 of available source devices that are known to be connected to inputs 422, 424 of AV receiver 102. In this context it will be appreciated that the earlier-mentioned initial setup procedures of AV receiver may include user labeling/identification of the devices connected to the various inputs together with a selection of compatible command data sets within universal controlling device 100, and the resulting user friendly labels such as "DVD player", "Projector", etc. may be used thereafter in the generation of displays such as that illustrated at 532. Additionally, the displayed listing may be further tailored by the AV receiver operating program to include only those currently-configured devices known to be compatible with the specified activity—for example, for the presently illustrated "Watch a Movie" activity devices which are incapable of sourcing a video stream, such as CD player 112 or tuner 408 may be omitted from the list presented to the user. At step 506, the user may employ navigation keys 210 of controlling device 100 to move a cursor 536 and select desired source device(s). One or more source devices may be selected, as indicated for example by indicia 534. In the event more than one source device is designated, the user may be prompted at activity execution time to select the desired source, as will be described in further detail hereafter in conjunction with FIG. 6.

Upon completion of source device selection, at step 508 a list 538 of possible destination devices may be displayed for user selection at step 510 in a similar manner to that described above. Once again, the list of devices may be tailored by the AV receiver operating program to include, in this case, only those currently-configured devices known to be capable of rendering the designated input media stream(s). Although not shown, it will be appreciated that other configuration options may also be presented to the user in certain embodiments, for example, selection of a destination for audio output. Once all user selections have been made, at step 512 the activity configuration parameters may be finalized and stored in AV receiver memory 402 for future use in configuring the home entertainment system when the indicated activity is called for, e.g., the final configuration is stored and associated with the received key command value corresponding to the activity key that was activated at the start of the configuration process. Thereafter, the AV receiver operating program may display a completion message 540, including in this example a reminder 542 that final source selection will be required at execution time. At step 516, the user indicates whether she wishes to set up another activity, in which case processing returns to initial step 502. If not, activity setup is complete and the AV receiver operating program exits setup mode and returns to normal operation.

The execution of an exemplary activity configuration request will now be discussed in conjunction with FIG. 6. Upon actuation of an activity button on controlling device 100, for example 202 "Watch a Movie" and receipt of the resulting appropriate key command value communication by AV receiver 102, assuming the AV receiver operating program is in the normal operation state (i.e. not in setup mode as described previously), at step 602 the AV receiver operating program first determines if the activity by the key command value received from the controlling device has in fact been configured. If not, at step 624 an error message is displayed, for example on TV 114, prompting the user to first configure that activity, and the activity request is ignored. If the activity has been configured, at step 604 the AV receiver operating program next determines from the configuration associated with the received key command value if multiple sources

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were configured. If so, at step 606 the options are displayed as illustrated at 630 and the user is prompted to select a desired source device, for example, by using the navigation and selection keys of the controlling device to highlight and select the desired source device. As will be appreciated, if only one source device was configured at setup time, this step may be skipped. Once a source device has been designated, at step 608 the AV receiver operating program selects the audio, video and/or AV inputs associated with the designated source device. At step 610, the AV receiver operating program determines if the selected source device is powered on, for example by detecting presence or absence of audio/video signal, sensing HDMI status, etc. as appropriate for the device connection in question. Alternatives such as power sensing, etc. may also be available in certain embodiments. If the selected source device is not powered on, in a preferred embodiment at step 612 a request may be issued to controlling device 100 via bidirectional communication link 130 to transmit a "power on" command to the source appliance. As will be appreciated, such a request would include data that functions to indicate to the controlling device 100 the intended target appliance for the "power on" command. Thereafter, at step 614 the AV receiver operating program determines if multiple destinations were configured. If so, at step 616 the options are displayed as illustrated at 632 and the user prompted to select a desired destination device as described above. Again, if only one destination device was configured at setup time, this step may be skipped. At step 618, the AV receiver operating program determines if the selected destination device is powered on, for example by sensing HDMI status. Alternatives such as detection of AV signals from an auxiliary output of a rendering device, power sensing, etc. may also be available in certain embodiments. If the selected destination device is not powered on, in a preferred embodiment at step 620 a request may be issued to controlling device 100 via bidirectional communication link 130 to transmit a "power on" command to the destination appliance.

While initiation of a "Watch a Movie" activity via key 202 may result in automatic configuration of keys of the controlling device, e.g., transport keys 240 may be configured to transmit commands in a format compatible with whichever of appliances 104, 106, 108 have been pre-configured as the media source within the remote control when in the "Watch a Movie" activity mode, in the event that multiple possible sources (or destinations) are possible in the "Watch a Movie" activity mode (which does not allow for a pre-configuration of the keys of the controlling device to a particular appliance), at step 622 data indicative of the appliances to be controlled in the currently selected activity mode may be transferred over bidirectional communication link 130 from the AV receiver operating program to controlling device 100 to cause the controlling device to configure itself to match the activity and selected source and destination appliances. It will also be appreciated that keys of the controlling device 100 may, in whole or in part, be matched to an intended target appliance as a result of receipt of the aforementioned requests to power-on a device and, as such, step 622 can be skipped if this data has already been provided to the controlling device by the AV receiver.

Although not illustrated in the example of FIG. 6, in certain embodiments additional appliance configuration may be initiated by the AV receiver operating program and/or the controlling device operating program and performed by controlling device 100, for example issuance of commands for selection of an appropriate input on TV 114 or projector 118, adjustment of video aspect ratio or picture settings to optimize presentation of the selected source material, etc. Also,

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additional actions may be initiated by the AV receiver operating program and/or the controlling device operating program with respect to appliances not participating in an activity. For example, initiation of a "Listen to Music" activity may cause the controlling device itself, or result in the issuance of requests to controlling device, to power off video display devices such as TV 114 or projector 118.

In addition to the interactions with AV receiver 102 described above, in certain embodiments the activation of an activity selection button 200 may also invoke a conventional controlling device-based macro command sequence as is known in the art and described, for example, in the previously referenced U.S. Pat. No. 5,959,751. Such macro sequences may be programmed by a user to, for example, adjust lighting levels, control drapes, etc. to create an environment suitable for the commanded activity, as well as to perform additional entertainment appliance configuration functions if desired.

Turning now to FIG. 7, in an alternative embodiment, a PC based activity setup application may be offered in place of or as an alternative to the AV receiver GUI based setup previously described above in conjunction with FIG. 5. Such a PC based setup option may comprise a locally installed application program, a Web application, or a combination thereof. As illustrated in FIG. 7, the PC based setup application may comprise a GUI 700 which offers a series of drop-down menus 702, 704 from which the various configuration options may be selected. In the illustrative example, separate panels 706 and 708 allow selection and configuration of sources and outputs of an activity and selection and assignment of appliance/controlling device key functionality for that activity, respectively. As will be understood by those of skill in the art, in general two drop-down menus such as 710 and 716 may not be active the same time, they are however illustrated as such in FIG. 7 to assist in a better understanding of the PC application. Drop down menu panel 706 may offer AV receiver related activity configuration choices similar to those previously described in conjunction with FIG. 5, and, to avoid repetition, these will not be repeated. In the illustrated exemplary embodiment, drop down menu panel 708 allows the controlling device key groups for volume control, channel changing and transport to be pre-configured as appropriate. As an aid to the user, in some embodiments an image 712 of controlling device 100 may be displayed with the affected key group highlighted—for example, when the drop down menu 710 for transport keys is active, this group of keys 714 may be highlighted in displayed image 712. In some embodiments, default key assignments may be dynamically established and displayed in panel 708 by the PC application based upon the current activity configuration settings. By way of example, if audio output for an activity is assigned to a set of speakers 718 connected to the output of AV receiver, the default volume key assignment 722 may be the AV receiver, whereas if the audio output for the same activity were to be assigned to the TV device 720, the default volume control key assignment may be the TV device. In this context, it will be appreciated that in certain embodiments provision may be made for uploading existing activity configuration settings from an AV receiver into the PC application for editing by a user, in which instance the existing values may become the default settings. It will be appreciated that in instances where more than one input or output device has been selected for an activity and the final choice is to be made at execution time as previously described, some or all of the drop down menu items in key configuration panel 708 may be omitted or replaced with generic designators such as "Audio destination device" or "Video source", etc.

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Once all aspects of the activities match a user's requirements, the user may cause the resulting configuration data to be downloaded into the exemplary AV receiver 102, for example via network interface 120 if both the PC and AV receiver are connected to the same network. Alternatively, configuration data may be uploaded to a remote server for subsequent download to the AV receiver, copied to a memory stick or smart card for physical transfer, etc. Additionally, controlling device 100 may be coupled to the PC and become the repository for some or all of the configuration data, either for later transfer to AV receiver 102, or for direct action by controlling device 100.

While various concepts have been described in detail, it will be appreciated by those skilled in the art that various modifications and alternatives to those concepts could be developed in light of the overall teachings of the disclosure. For example, while described in the context of an AV receiver acting a central switching point for content streams in a home entertainment system, it will be appreciated that any other suitably equipped device, for example an advanced cable or satellite STB, a personal computer, etc., may be substituted for an AV receiver in the practice of the instant invention. Further, while a preferred embodiment described above comprises a controlling device capable of bidirectional communication with an AV receiver or other central switching device, it will be appreciated that many of the steps of the inventive methods may also be practiced in a system comprising a controlling device which is in unidirectional (inward) communication with the central switching device, in which case certain controlling device actions may be initiated autonomously as macro sequences using, for example, discrete appliance commands as are known in the art. Furthermore, in the case of a unidirectional controlling device, it is contemplated that, in lieu of receiving appliance indicating data from the AV receiver, the controlling device may be programmed whereby activation of a particular device mode key, e.g., cable, DVD, game player, etc., is used by the controlling device to configure groups of keys of the controlling device to communicate commands to a one of plural possible sources and/or destination appliances in a give activity mode, for example by activating the desired mode key(s) within a predetermined period of time after activation of the activity mode key when used to place the controlling device and AV receiver into that activity mode. Activation of a device mode key in this manner may also be used to cause the transmission of data to the AV receiver to thereby cause the AV receiver to select one of multiple possible sources and/or destinations in lieu of the menu navigation/selection method that was also previously described.

Still further, while described in the context of functional modules and illustrated using block diagram format, it is to be understood that, unless otherwise stated to the contrary, one or more of the described functions and/or features may be integrated in a single physical device and/or a software module, or one or more functions and/or features may be implemented in separate physical devices or software modules. It will also be appreciated that a detailed discussion of the actual implementation of each module is not necessary for an enabling understanding of the invention. Rather, the actual implementation of such modules would be well within the routine skill of an engineer, given the disclosure herein of the attributes, functionality, and inter-relationship of the various functional modules in the system. Therefore, a person skilled in the art, applying ordinary skill, will be able to practice the invention set forth in the claims without undue experimentation. It will be additionally appreciated that the particular concepts disclosed are meant to be illustrative only and not

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limiting as to the scope of the invention which is to be given the full breadth of the appended claims and any equivalents thereof.

All patents cited within this document are hereby incorporated by reference in their entirety.

What is claimed is:

1. A method for configuring an audio visual entertainment device in communication with a plurality of devices for an activity, comprising:

associating a command value corresponding to an activity key of a controlling device with a configuration of the entertainment device, the configuration of the entertainment device comprising at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device; causing the entertainment device to access and use the configuration associated with the command value corresponding to the activity key of the controlling device in response to the entertainment device receiving from the controlling device a signal which includes the command value corresponding to the activity key of the controlling device; and

causing the entertainment device to issue a request to the controlling device to cause the controlling device to place one or more of the audio visual input source device and the audio visual output destination device into a desired state;

wherein the controlling device further responds to the request to automatically configure itself whereupon an activation of one or more command keys of the controlling device will cause the controlling device to communicate commands to the one or more of the audio visual input source device and the audio visual output destination device.

2. The method as recited in claim 1, wherein the desired state comprises a powered on state.

3. A method for configuring an audio visual entertainment device in communication with a plurality of devices for an activity, comprising:

associating a command value corresponding to an activity key of a controlling device with a configuration of the entertainment device, the configuration of the entertainment device comprising at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device; and

causing the entertainment device to access and use the configuration associated with the command value corresponding to the activity key of the controlling device in response to the entertainment device receiving from the controlling device a signal which includes the command value corresponding to the activity key of the controlling device;

wherein, in response to the entertainment device receiving from the controlling device a signal which includes the command value corresponding to the activity key of the controlling device, the entertainment device transmits to the controlling device a signal for causing the controlling device to automatically configure itself whereupon an activation of one or more command keys of the controlling device will cause the controlling device to com-

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municate commands to the one or more of the audio visual input source device and the audio visual output destination device.

4. The method as recited in claim 3, comprising displaying in a display associated with the entertainment device a graphical user interface for allowing a user to select at least one of the plurality of devices to be used in the configuration.

5. The method as recited in claim 4, wherein the graphical user interface presents for user selection only those of the plurality of devices that are appropriate to the activity being configured.

6. The method as recited in claim 4, wherein the graphical user interface allows the user to select at least one of the plurality of devices as the audio visual input source device for the entertainment device.

7. The method as recited in claim 4, wherein the graphical user interface allows the user to select at least one of the plurality of devices as the audio visual output destination device for the entertainment device.

8. The method as recited in claim 4, wherein the graphical user interface is displayed in response to a configuration request received from the controlling device, the configuration request including the command value corresponding to the activity key of the controlling device.

9. The method as recited in claim 4, wherein the user selection of at least one of the plurality of devices to be used in the configuration comprises one or more signals received from the controlling device having data indicative of an appliance.

10. The method as recited in claim 3, wherein the configuration of the entertainment device is downloaded into the entertainment device from a computing device in communication with the entertainment device.

11. The method as recited in claim 3, comprising causing the entertainment device to place a one or more of the plurality of devices not selected as the audio visual input source device and the audio visual output destination device into a desired state.

12. A method for configuring an audio visual entertainment device in communication with a plurality of devices for an activity, comprising:

associating a command value corresponding to an activity key of a controlling device with a configuration of the entertainment device, the configuration of the entertainment device comprising at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device; causing the entertainment device to access and use the configuration associated with the command value corresponding to the activity key of the controlling device in response to the entertainment device receiving from the controlling device a signal which includes the command value corresponding to the activity key of the controlling device; and

displaying in a display associated with the entertainment device a graphical user interface for allowing a user to select at least one of the plurality of devices to be used in the configuration;

wherein the user selection of at least one of the plurality of devices to be used in the configuration comprises one or more signals received from the controlling device having data indicative of an appliance, wherein the one or more signals are transmitted from the controlling device to the entertainment device in response to an activation of a one or more keys of the controlling device which are

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associated within the controlling device to an appliance being selected for use in the configuration, and wherein the controlling device further uses the activation of the one or more keys to automatically configure itself whereupon an activation of one or more command keys of the controlling device will cause the controlling device to communicate commands to the one or more of the audio visual source device and the audio visual output destination device.

13. A method for configuring an audio visual entertainment device in communication with a plurality of devices for an activity, comprising:

associating a command value corresponding to an activity key of a controlling device with a configuration of the entertainment device, the configuration of the entertainment device comprising at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device; and

causing the entertainment device to access and use the configuration associated with the command value corresponding to the activity key of the controlling device in response to the entertainment device receiving from the controlling device a signal which includes the command value corresponding to the activity key of the controlling device;

wherein the configuration of the entertainment device is downloaded into the entertainment device from a computing device in communication with the entertainment device and wherein a configuration of the controlling device in which an activation of one or more command keys of the controlling device will cause the controlling device to communicate commands to the one or more of the audio visual source device and the audio visual output destination device is downloaded into the controlling device from a computing device in communication with the controlling device.

14. A method for configuring an audio visual entertainment device in communication with a plurality of devices for an activity, comprising:

receiving at the entertainment device from a controlling device a configuration request signal, wherein the configuration request signal includes a command value corresponding to an activity key of a controlling device;

causing the command value corresponding to the activity key of the controlling device included in the configuration request signal to be automatically associated with a configuration of the entertainment device wherein the configuration of the entertainment device comprises at least one of the plurality of devices being used as an audio visual input source device for the entertainment device and at least one of the plurality of devices being used as an audio visual output destination device for the entertainment device; and

causing the entertainment device to access and use the configuration associated with the command value corresponding to the activity key of the controlling device in response to the entertainment device subsequently receiving from the controlling device a command signal which includes the command value corresponding to the activity key of the controlling device.

15. The method as recited in claim 14, comprising causing the entertainment device to display in a display associated with the entertainment device, in response to receiving the configuration request signal, a graphical user interface for

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allowing a user to select at least one of the plurality of devices to be used in the configuration for the entertainment device.

16. The method as recited in claim **14**, comprising causing the entertainment device to download from a computing device in communication with the entertainment device, in

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response to receiving the configuration request signal, the configuration for the entertainment device.

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